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THE CULTIVATOR

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Foreign Correspondence.

MR. NORTON'S LETTERS—NO. XIV.

Analysis of Slates—Importance of Chemical Investigation.

Laboratory. of Ag. Chem. Association,
Edinburgh, May 30, 1845.

L. TUCKER, Esq.—Among my other labors in the Laboratory, I have lately been engaged in an analysis of a series of slates, with a view to the agricultural capabilities of the soils formed by their decomposition. Such analyses are not diffiult in performance, and are, as I hope to show, of great importance to the practical man.

The seven slates of which I give the analyses, were from Wigtonshire, in the south-west corner of Scotland, and were picked up at random by Prof. Johnston, during one of his journeys in that section.

Without perplexing your readers by long descriptions of the process employed, I will only say that the powdered slate was first treated with muriatic acid, which dissolved the carbonates of lime and magnesia, and a large portion of iron and alumina. The remaining insoluble portion was then fused, and from it obtained the silica, the remainder of the iron and alumina, and the caustic lime and magnesia, all of these last having been in combination with the silica as silicates.

The alkalies, that is the potash and soda, were determined only by loss. The principal object sought was the lime, and this was determined with much care. The annexed tables will show, I think, that the investigation was not an unimportant one:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.
Silica,.....	60.13	68.08	57.53	75.79	67.59	37.82	72.05
Iron and Alumina sol. in Mur. acid.	5.31	5.51	7.67	6.43	4.82	12.13	7.09
Do. obtained after fusion,.....	13.93	18.12	22.29	9.45	21.49	39.41	13.61
Carb'te of Lime,	12.77	0.46	3.51	0.45	0.39	.....	0 34
Carb. Magnesia,	3.43	0.39	1.73	2.15	1.66	.....	0.35
Caustic Lime,...	0.24	0.62	0.30	1.09	0.43	0.50	.....
Caustic Magnesia	1.25	1.07	1.89	0.44	2.90	6.13	2.79
Alkalies and loss,	2.94	5·75	5.05	4.20	0·72	4.01	3.77
	100.00	100.00	100.00	100.00	100.00	100.00	100.00

The above figures represent the number of pounds in a hundred, the per centage. Thus, in No. 1 there are 60 13.100 lbs. of silica, 12 77.100 lbs. carbonate of lime, &c.

On one point I have not yet satisfied myself. I think that some of the lime dissolved by muriatic acid. was in the state of soluble silicate rather than carbonate, that is, in combination with silica in place of carbonic acid. This, if true, is important, and I am about to determine the fact, but shall not be able to give the result in this letter.

It must be obvious, even to a person unacquainted with the nature of the substances above named, that soils formed by the decomposition of these slates must differ greatly in their composition; but to one who knows their properties it is no less evident that they must differ in their agricultural capabilities also.

We will first notice the important ingredient of lime. All of that represented as carbonate, is in a state to be directly available for the food of plants. The caustic or quick lime, being in the insoluble part, would be more tardy in its operation. It is not to be despised however, for its action, though slow, is sure. We see as to the carbonate, that while No. 1 has 12.77 lbs. in a hundred, Nos. 2, 4, 5, and 7 have only from 3 to 4 tenths of a pound, and No. 6 has none, or merely a trace.

The differences in the quantities of magnesia are also striking, and it is not unworthy of notice that there is generally more of it in the insoluble portion, represented as caustic magnesia, than in the state of carbonate in the acid solution. This being a necessary ingredient in a fertile soil; its presence is favorable, though in excess it is found injurious. In No. 6 there is perhaps too much of it, especially when we consider the small quantity of lime.

The alkalies are also, as they should be, in considerable quantity, except in No. 5. The quantity of iron and alumina soluble in muriatic acid is as high as 12 per ct. in No. 6, and as a portion of the iron is in the state of protoxide, and soluble therefore in water, it might under certain circumstances accumulate in the subsoil to a hurtful extent.

The proportion of these substances being so different, we see proved the importance of chemical investigations. The above slates were taken from separate strata, all of which would probably be embraced within a circle of 20 miles, and the soil produced by each would need a peculiar treatment. How absurd would be an attempt to cultivate all upon the same system, and yet such attempts are not unfrequent. It is in such districts as the one now under consideration, that we find contradictory accounts respecting the benefit resulting from the application of certain manures. For instance, a farmer upon the soil of No. 1 finds that the application of lime produces no good effect, while his immediate neighbor, upon another strata, such as No. 6, may say that lime is quite invaluable, that it doubles his crops. One therefore, is an advocate for lime as an universal remedy; the other says that it is of no use whatever. Both are right as to their own cases, but are wrong in making a rule from one isolated instance, or even the experience of a limited district.

Lime would no doubt be effective added to the soils of all the slates except Nos. 1 and 3, while sulphuric acid and bones would greatly benefit the whole of them, as supplying in addition to lime, sulphuric and phosphoric acids, in both of which substances they are either deficient or contain them in very small quantities. My remarks might be extended to a very great length, and might embrace many points necessarily omitted, but I will not trespass too much upon your columns.

JOHN P. NORTON.

ROTATION OF CROPS IN SCOTLAND.

Featherhall, Midlothian, 30th May, 1845.

To the Editor of the Albany Cultivator.

SIR—In my last I pointed out to you that the characteristics of a philosophical course of rotation of crops, are, placing plants requiring the same substances for their development, as far from each other in the course as possible; and the affording facilities for the disentegration of the soil, and for destroying and preventing the growth of weeds. I shall now draw your attention to the principal rotations practiced in the Lothians, and examine them by the standard above laid down; but before doing so, it will be necessary to inquire, what are the substances of which the different crops are composed?

At the risk of repeating what may already have appeared in your journal, I transcribe the results of some of Sprengel's analytical researches into the constitution of vegetable bodies, and I also add a table prepared by myself, showing the qiantities of inorganic substances per Scots acre, carried off, by a good crop, such as is usually raised in my own district, (a fertile one.)

TABLE showing the quantity of inorganic substances contained in 1000 *lbs. of each of the different productions named with the exception of the Turneps and Potatoes, which show the quantities in* 10,000 *lbs.*

	Wheat.		Barley.		Oats.		Beans.		Vetch		Rye Grass	Red Clover.	White Clov'r	Turneps		Potatoes.	
	Grain.	Straw.	Grain.	Straw.	Grain.	Straw.	Grain.	Straw.	Grain	Straw				Roots.	Leaves.	Roots.	Leaves.
Potash,	2.25	0.20	2.78	1.80	1.50	8.70	4·15	16·56	8·97	18·10	8·81	19.95	31.05	23.86	32.3	40.28	81.9
Soda,	2.40	0.29	2.90	0.48	0 32	0·02	8·16	0·50	6·22	0·52	3·94	5.28	5.79	10.48	22 2	23.34	0.9
Lime,	0.96	2.40	1.06	5.54	0.86	1.52	1·65	6·24	1·60	19·55	7·34	27.80	23.48	7.52	62.0	3.31	129.7
Magnesia,	0.90	0.32	1.80	0.76	0.67	0.22	1·58	2·09	1·42	3 24	0·90	3.33	3.05	2.54	5.9	3.24	17.0
Alumina,	0.26	0.90	0.25	1 46	0.14	0.06	0·34	0·10	0.22	0·15	0·31	0.14	1.90	5.36	0.3	0.50	0 4
Oxide of Iron,	trace	.....	trace	0.14	0.40	0.02	....	0·07	0·09	0·09	.....	.....	0.63	0.32	1.7	0.32	0.2
" of Manganese,	.....	.....	.....	0.20	.....	0.02	....	0·05	0·05	0·08	.....	.....	.....	.....	.....	.....	.....
Silica,	4.00	28.70	11.82	38.56	19.76	45.88	1·26	2 26	2·00	4·42	27·72	3.61	14.73	3.88	0.84	0.84	49·4
Sulphuric acid,	0.50	0.37	0.59	1.18	0.35	0.79	0·89	0·34	0 50	1·22	3·53	4.47	3.58	8.01	5.40	5.40	4.2
Phosphoric acid,	0.40	1.70	2.10	1.60	0.70	0.12	2·92	2·26	1·40	2,80	0·25	6.57	5.05	3.67	4.01	4.01	19.7
Chlorine,	0.10	0.30	0.19	0.70	0.10	0.05	0·80	0·80	0·43	0·84	0·06	3.62	2.11	2.39	1.60	1.60	5.0

TABLE showing the quantities of inorganic substances per Scots acre, carried off by the following crops in pounds.

	Potatoes	Wheat.	Turneps	Barley.	Hay.	Oats.	Beans.
Potash,	121.23	6.32	199.35	13.74	85.11	43·65	69.38
Soda,	52.81	7.01	95.36	10·14	28·98	4.05	22.15
Lime,	56.05	3.80	114.64	19.80	98.86	9.42	25.96
Magnesia,	13.19	3.37	23.68	7.68	11.92	3.00	11.26
Alumina,	1.27	3.80	2.82	5.13	1.59	0.69	1.20
Oxide of Iron.	0.79		3.94	0.42		1.29	0.24
Do. Manganese,				0.60		0.09	0.17
Silica,	20.40	110.45	39.96	157.14	119.90	265·74	10·85
Sulphuric acid,	13.71	2.51	81.27	5.31	25.29	4.60	3.41
Phosphoric acid,	16.40	6.95	35.49	11.10	17.42	2.64	15.21
Chlorine.	5.46	1.30	25.43	2·67	9·29	0.52	3·82

I shall first then notice a rotation which prevailed over a great extent of country, but which for reasons I shall afterwards explain, is now much restricted. I refer to what is called the four course shift; it consists of, 1st year, naked fallow, beans, or (near large towns) potatoes, to all of which a liberal supply of manure is given; 2d year, wheat; 3d year, grass for hay or pasture; 4th year, oats. In a pastoral district or one where a light soil prevails, this course is modified thus: 1st, turneps manured; 2d, wheat or barley; 3d, grass for hay or pasture; 4th, grass, pastured; 5th, oats. By referring to the 2d table you will find that this rotation may be called a correct one, as you will observe that the beans, potatoes, and turneps, take large quantities of substances which the wheat and barley use sparingly, but upon which the succeeding hay crop makes large demand, this again followed by oats, requiring a limited supply. It has been found however, that in this course, it is often difficult to secure a plant of clover, (a matter of the first importance, owing to the land becoming what is technically termed "cloversick," a circumstance which, notwithstanding the strong light of science now shed upon agriculture, is still unexplained; this has given rise to a more extended rotation, in which grass recurs after longer intervals, and is generally found to have the desired effect.

In the best cultivated districts of Mid Lothian, the extended course I have just adverted to, consists of 1st year, potatoes manured; 2d, wheat: 3d, turneps manured; 4th, barley or oats; 5th, hay; 6th, oats. In East Lothian, where, owing to the distance from any large town, potatoes are little cultivated, this course consists of first year, naked fallow manured, 2d, wheat, 3d grass, 4th oats, 5th beans manured, 6th wheat; on light descriptions of land the fallow is sometimes displaced by turneps.

In the fertile district around Dunbar, the soil of which consists of a rich loam, a peculiar rotation prevails, which has been termed the "Dunbar system." It consists of, 1st year, turneps manured, and consumed by sheep on the ground; 2d, wheat: 3d, grass (pasture;) 4th, wheat or oats; 5th, beans manured; 6th, wheat. The most remarkable feature in this course, is the raising of wheat every second year, the crops of which are most luxuriant. On referring to the table, it will be found, and the fact is a very curious one, that wheat contains a smaller quantity of inorganic substances per acre, than any other of the ordinary plants of agriculture; we must not however, forget that it is rich in nitrogen, and we find that it requires a great supply of azotised manures, and accordingly that the treatment of the land in this district is of the most liberal character. On examination of the three last mentioned courses, you will observe that they possess all the characteristics of a judicious rotation in a very high degree; with the exception of the last, they introduce a large number of plants into the course, thus preventing their repetition, except at long intervals; they also afford two opportunities in six years, of deepening and minutely pulverizing the soil, and extirpating weeds during the cultivation of what have been termed fallow crops, which are always grown in rows, with intervals varying from 26 to 30 inches, in which the horse and hand hoe are kept constantly at work until the foliage of the plants prevents their further employment.

I have now laid before you a short account of the rotations generally practiced in our best cultivated districts; on no farm however, are they adhered to without some slight deviations, as circumstances sometimes occur rendering departure from the particular course generally adopted, judicious or indispensible, as for instance when grass seeds fail, &c.; the rotation is the rule however.

In concluding this paper, it is with pleasure that I advert to the interesting fact, that here we find the revelations of science illustrating and explaining the maxims of a lengthened and wide spread experience, thus showing us the value of those researches, which some have been but too much disposed to decry, and bidding us hope the noontide of that day is not far distant, the morning of which has already dawned, when scientific knowledge, based upon carefully conducted experiment, will replace that knowledge which has only been obtained by the gropings in the dark of generations, and by a painful and dear-bought experience.

In my next I will proceed to give you a detail of the methods pursued in the cultivation of the different crops, beginning with the fallow ones. JNO. GIRDWOOD.

LETTERS FROM MR. HORSFORD—No. VI.

MR. TUCKER—The annexed diagrams will enable your readers to form a tolerably correct idea of the plow generally used in the vicinity of Giessen. Fig. 75

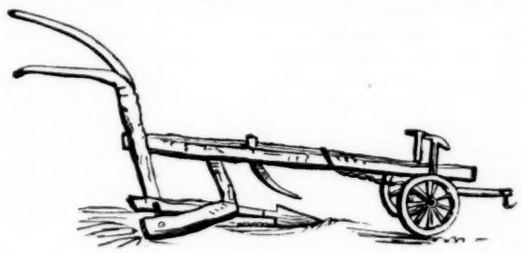

Fig. 75.

represents the various parts in connection. Fig. 76, the part corresponding with the mouldboard. Fig. 77, the share of the plow, from above. A crotch, of natural growth, furnishes the handles and uprights for the reception and support of the beam —a round pole of the usual diameter. These are connected with an imperfectly squared block at the bottom, which occupies the place of the landside, and is plated on the sides and below with iron. The cutter fits loosely a mortice in the beam; and immediately below, or perhaps more generally a little behind, the share. Fig. 77 is bound to the landside. Those portions included within the dotted lines of Fig. 77, are wrapped around the termination of the block. A frame work of eight or ten inches square, supported by the wheels, gives free play to the beam, and permits elevation or depression by means of little blocks, regulating thereby the depth of the furrow. The whiffletrees are fastened to a short tongue, which passing through the axle is attached to a chain, extending to the middle of the beam, and there secured by a clevis.

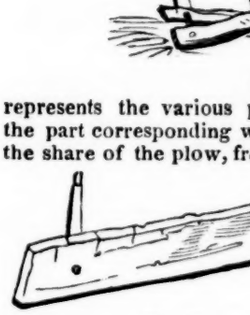

Fig. 76.

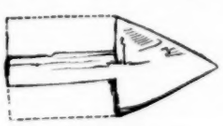

Fig. 77.

It will be seen that thus far, the plow is as well adapted to turn furrows to the right as to the left. The addition of the mould-board, Fig. 76, determines the direction. This is changed in plowing, from one side to the other, so as to turn all the furrows the same way. I have seen this plow in use with one horse, with two horses, one ox, and with two cows, though not yet with two oxen, though I presume it is in difficult plowing.

In Baden, near the Heidelberg, another kind of plow is employed. The annexed diagram, (fig. 78,) was

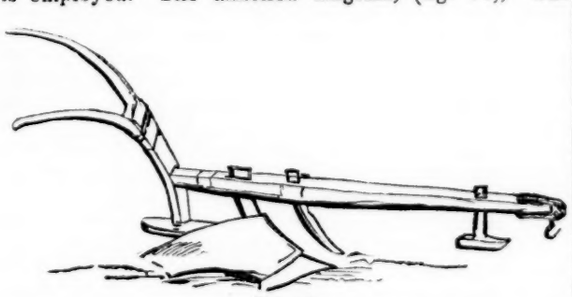

Fig. 78.

sketched from the best one that I saw. In place of the shoe near the end of the beam, to regulate the depth of the furrow, many were furnished with pairs of wheels. The mould-board consists of a single sheet of iron plate about the eighth of an inch thick, to which the requisite form is given in a kind of press.

Other plows, consisting of modifications of this and that of Fig. 75, are, as I am informed, in use both in the vicinity of Heidelberg and in other parts of Baden.

The harrows that I have seen, are simply the quadrangular frame much in use upon farms in New-York, except that they are generally very much lighter. A convenient mode of transporting the plow and harrow has, for the last four weeks, been illustrated each morning, as the peasants go from the town to their fields in the adjacent country. The plow turned down upon the side, is supported by a crotch, the two prongs of which trail at some distance behind upon the ground. Upon the plow the harrow rests securely. This troop of peasants going from the cities and villages every morning, and returning at evening, is unlike any thing the new world affords, or ever will. There can be no desire that it should, for in the course of a year, an immense sacrifice of time, through this feudal inheritance of residing in hamlets and towns, must be inevitable.

That improvement in agricultural implements should be slow in Hessia and Baden is not difficult to explain. Modes and practices that have received the sanction of centuries, and are positively known to be connected with certain invariable results, will naturally be more warmly confided in by a peasant of moderate means, than new and untried schemes, though they may furnish much larger returns. With the burthen of taxes, which I was told amounts in this rich Duchy of Baden, to about one tenth of the income of the agriculturists, the peasant with his whole family must work most industriously, and live most economically, if he would be prepared for advanced age or illness; and above all if he would make the condition of his sons, at their entrance upon active life, better than that of their fathers had been. I am inclined to give this explanation to the want of enterprise in general, and of course to the hesitation in the adoption of improvements.

In a conversation with the Director of Agriculture, connected with the University of Heidelberg, I mentioned the extensive use of threshing machines in the United States, and inquired if they might not profitably be introduced here. He thought not, and gave the condition of the peasantry, their moderate means, and generally small fields of grain, and reasons. I remarked that more recently, few individual farmers, comparatively, owned machines, but that most of the wheat in particular sections was threshed by movable machines, to which a portion of the horse-power and most of the men were supplied by the owner of the wheat. This gave him a new view of the matter; stillhe seemed to think it would be difficult for a manufacturer to find purchasers. And the gentlemen to whom I mentioned the subject and of whom I made the same inquiry, remarked that without threshing with the flail the peasants would have nothing all winter to do.

I commenced this letter more than a fortnight since, and in the interval, the gardens, fields, and woods have assumed a new dress, as beautiful here as I have ever seen it any where, and the more grateful that the winter has been so prolonged. In November, the hedges, fruit, shade, and forest trees, all seemed to me dwarfish, and altogether of indifferent development. But now they have been through the hands of the *Forest master*, and display a neatness and prettiness of appearance that enables them to approximate their *natural* brethren of America. Apple trees have been engrafted anew, bowers and ornamental shrubs trimmed and trained, and these with the groves in bloom and leaf, make Giessen, to one at all disposed to a generous consideration of good qualities in objects about, a very pleasant place of residence. One feature of the landscapes in the vicinity, at first impressed me unpleasantly. It was the abrupt cutting at a height of from twenty to forty feet, and close trimmings of the trees along walks, and particularly throughout the valley of the Lahn and its tributaries. I was none the less gratified that no object seemed apparent in what seems to me, this strange taste of the Germans. At length, a pupil of the Forest Instruction Department of the University, explained it fully. The close trimming in the spring supplies from the willows, the basket manufactures;—of the larger and harder woods, materials for controlling the channels of the streams, by filling up the elbows, or making partial dams, and a variety of other uses; and the trunks becoming exceedingly hard from the abundance of knots and curvatures in the grains, furnish a valuable kind of timber

In walks about town and in the adjacent country, numerous mills are met with, all upon the same plan, for grinding wheat, rye, &c. They are scarcely more complicated than the pestle and mortars of the ancients—comparatively speaking. A building in Marburg, about seventy feet long and one story high, contains seven of the entire suites of apparatus. Each stone has its separate wheel, and is of about two thirds the diameter of those used in Rochester, and in the northern states generally. The bolt is a little trough, about four feet long, six inches wide, and three deep, with a linen sieve across the bottom. It is subjected to a lengthwise, vibratory motion, and is inclined so as to conduct the pulverized grain pretty rapidly from one extreme to the other. This and the whole hopper, stone and all, occupy scarcely more than twelve feet cube. The best flour is ground three or four times; of this the white bread is made in little biscuits, while the loaves in use as the staple by every body, are dark brown and contain rye.

Compare this with the sources of bread in the Genesee valley! Here with one stone, a man may grind, perhaps, ten bushels in a day—and with fifty stones, a corresponding proportion would be ground. I remember having read that in the season of 1841, something like 2500 barrels, daily, were ground and packed in the city of Rochester alone. The statement of this index of the perfection of our machinery for flour making, does not fail to bring an exclamation in Giessen.

The lectures are all in progress. Liebig's course is attended by more than a hundred students—some of whom, however, are members of the medical class. You have doubtless already learned that he is applying science to the manufacture of manures for England. I send you herewith, a letter published not long since in England, and of which, as there is a copy right reserved, you may not receive another copy. If you can find room for it in the Cultivator, I wish it might have a place for your readers. It certainly presents in the clearest light—in the most comprehensible and convincing form, the advantage which will result from the application of science to agriculture.

Truly yours, E. N. HORSFORD.

MR. MITCHELL'S LETTERS—No. VIII.

The Moorlands of Scotland—Their Cultivation and Products.

Inverness, North of Scotland, June 16, 1845.

LUTHER TUCKER, ESQ.—My last contained notes through the bog districts of Ireland; the present dates from the capital of a still wilder country. Nothing can exceed the sterility and impracticable nature of much of the Scotch moorland. The soil is meagre, rests upon beds of coarse gravel, and is covered with heather, affording nourishment to a few sheep and black cattle, not much larger than the sheep of England, and to the multitudes of grouse which draw southern shooters by thousands in the months of August and September. These moors are measured, not by acres but miles, and lie variously from 1,000 to 4,000 feet above the sea. Habitations are seen only at great intervals of distance, and consist either of a shooting lodge, keeper's cottage, or shepherd's hut. The roads are few, and except in the shooting season, commencing with the 12th of August, are travelled only by the mail coaches.

I speak now more particularly of the great inland districts both north and south of the Caledonian canal. Agricultural resources are necessarily exceedingly limited. The annual rental value of the moorlands proper for grazing, would not exceed two cents an acre. The shooting privileges and trout and salmon fishing in the streams that are scattered over them, would add perhaps eight or ten cents to the yearly value; depending, however, much upon the strictness of preservation and convenience of access. It is not uncommon to pay some $2,000 to $3,000 for the privilege of shooting over a moor a single season. Estates are of enormous extent. Two days since I rode for upwards of fifty miles through the Athol property alone. Timber is chiefly pine and larch—only to be met with in plantations, or occasionally remnants of native growth, scattered through the glens and upon the sides of the mountains. Nor do the plantations make an inconsiderable figure in the landscape of this wilderness, since the number of larches planted by the late Duke of Athol exceeded twenty-seven millions. Birch grows extensively in the valleys, but reaches a size only sufficient for fencing and fuel. Thirty to forty miles of distance may nevertheless be gone over in the moor districts without sight of a tree.

Grazing prevails to such an extent in the Highlands as to deprive the majority of the population of any steady employment, and extreme poverty is the natural consequence. The huts of the poorer classes are even more wretched than any I met with in Ireland. The walls are of stone and mud, the roof of turf, and the floor the bare ground; sometimes a rude chimney is constructed, but oftener the smoke is allowed to escape at the door. Their food, oat meal and potatoes. They manage to put in a small patch of oats about their cottages, which the younger children watch against the depredations of the roving cattle; and in the valleys the farmers allow those who please to plant with potatoes as much land as they will supply with manure. Oats and potatoes, with some wheat, are principally grown in the better agricultural districts of the north. The chief agricultural exports are sheep, wool and black cattle. The sheep are mostly the black faced, of very smal size, and light and coarse fleeces. They are extremely hardy, and as nimble as goats; the mutton is not fat, but very sweet; and it commands an extra price in the London market. This breed of sheep is frequently crossed in the more fertile districts with the Cheviot sheep of the south, and in some the Cheviots are wholly preserved, or crossed with still larger sheep of England—the finer wool and larger carcases of the latter ensuring larger profits. An annual fair is held in Inverness in July, at which it is estimated 800,000 pounds of wool, and 100,000 sheep change owners. The black cattle are small, but the beef is highly esteemed for its delicate flavor, and maintains a good price even when it comes in competition with the famous breeds of the south.

Such dairies as are to be found, favor the Ayrshire blood. The butter is good—worked wholly with beach paddles, and neatly turned into forms of acorns and strawberries for the table. Much poor cheese is made in parts of the Highlands, which would not do discredit to some of our white cheese makers at home, but the best is either from England or Ayrshire.

The implements of agriculture are not of so improved a character as in the south. Neither draining or drilling is general. The crops are not clean, and from the window where I sit, I can distinguish the oat fields over some miles of territory by the yellow blossoms of the mustard.

Great numbers of Highland ponies are annually sent to England. They are very hardy and strong, and are sold from £3 to £6 a head. Guano is used extensively near the seaport towns, and sea manure along the coasts. Hedges are not numerous, nor are divisions of any kind, herds of cattle being generally attended, even in the immediate neighborhood, by a watcher. Farmers are just now busy with the sowing of turneps, and the cleaning and earthing of their potatoe crop. These crops are both planted in drills. The potatoes are put three or four inches apart, directly upon the manure, and covered with the plow—afterward rolled. When an inch out of ground the crop is thoroughly hoed by hand; it is next gone through with a scarifier, which thoroughly loosens the soil between the rows; this is followed by the plow throwing a furrow against the potatoes from either side. One thing is highly noticeable, both of this and of every drilled crop I have yet seen in Great Britain—this is the extreme regularity and evenness of the rows. A furrow of a hundred rods in length will not vary a foot from a straight line. This is effected not by measuring and timing, but simply by the expertness of the plowman and the perfect training of the horses. It is unnecessary to say how much this adds to the appearance, as well as to the facility with which a crop is cultivated and harvested.

Here, as in every part of Scotland I have visited, the native gardeners maintain their celebrity; vegetables being abundant and good. Farm cottages of the better

class are built of stone, and the roofs slated. Heath is used for thatch, as also turfs cut into scollops. The season had been up to the 10th instant exceedingly cold. The weather has now changed to the warmth of midsummer and vegetation is most rapid. The oat and wheat crop are not, however, more forward than usually at this season in New England; the grass is, I fancy, in advance of yours. Soiling is praticed to a considerable extent on some farms in the neighborhood of the towns, and fresh cut grass is extensively fed, with oats, to working horses. Clover and the Italian rye are the prevailing grasses cultivated.

Honey is abundant in the Highlands—made from the blossom of the heather; it is not agreeable to my taste, however its mildness may suit others. The hive is after the oldest fashion, and most rural, being formed by a coil of twisted straw.

The clothing of the farm laborers is home-made, mostly a blue mixture; and in nearly every cottage you can hear the sound of the loom.

The observations above apply exclusively to the northern districts of Scotland; those of the south being of as different character as possible; and offering the finest examples of British husbandry which has yet fallen under my notice. They will be the subject of some future communication.

You will notice with some interest reports of the recent debate in parliament upon the subject of the corn laws; offering additional ground to suppose that the free importation of grain will be the ultimate and not very distant result of the increasing agitation of the subject.

Truly yours, D. G. MITCHELL.

Domestic Correspondence.

CANADA THISTLES.

I was glad to see in a late number of the Cultivator the remarks on this weed; and more particularly the caution against its introduction into places where it is now unknown; as in this case an ounce of prevention is worth some forty or fifty tons of cure, at least. But that the inexperienced may know something more of the evil they should shun, I wish here to repeat in substance a statement I have seen somewhere of the loss occasioned by a small patch of Canada thistles, which is perhaps about right for such as are *small*—large ones needing a different estimate, especially such an one as I once saw, which *covered an entire large farm*, having spread to this extent during a few years neglect.

Loss from a Small Patch.

Loss in lot No. 1, wheat smothered by their growth, ...	$12 00
" " No. 2, wheat checked in growth, and injured in quality by green thistles bound up with it, ...	10 00
" by having ten hands hindered an hour each day, for five days, picking thistles from their fingers, ...	4 00
" by a load of wheat upset before a long shower, by being badly built, the loader being afraid to touch the sheaves, ...	3 00
" by tearing leather strap and breaking three cogs from horse power threshing machine, in attempting to force a large bundle of tough thistles, unbound, through the machine, ...	5 00
" of time to 11 hands, and by collecting them again, three days after the above accident, when the machine was mended, ...	3 00
Total, ...	$37 00

The profits of a farm covered with such patches, intermixed with corn, oats, barley, grass, &c., may be reckoned the same way.

A city may be most *easily* preserved from conflagration by allowing no fire to spread; by extinguishing instantly all that appears. The same principle applies to the spread of Canada thistles. A miller refused to employ a skilful embanker to close a muskrat hole in his dam because he asked a dollar—a sum he would gladly have paid the next day, when the hole had washed larger, but not three dollars, the amount then charged; but the third day he was *compelled* to pay fifty dollars, as the torrent was fast sweeping away his dam. The spread of Canada thistles *must* be stopped, if we continue farming; why not do it then when it may be *easily* done?

I have had some experience in destroying them, and more observation; and I know of no way which will at all compare with thorough and repeated plowing.

The first plowing must be left till about the time that the thistles appear in flower, or when they have become considerably exhausted by growth, when they must be *well* and *deeply* turned under, mowing the thistles previously if necessary to the success of the work. Then they must be again turned under at least once a month till mid-autumn, or thereabouts, when, if the work has been WELL DONE, *the patch will be killed forever*, or till the ground is again seeded with thistles from elsewhere. Wheat may be sown on the ground the same autumn. A statement of a few experiments may place this in a clearer light:

Daniel Wilson, of Covington, Genesee county, N. Y., had a patch of Canada thistles so dense that the roots formed a complete mat. "He plowed the ground at regular intervals of four weeks for four successive times, when after the fourth plowing there was not a thistle to be seen, and the ground was in fine tilth for sowing wheat, loose and nice enough for any garden vegetables; and now, July, 1833, there is a most luxuriant crop of wheat on the old thistle bed, and *not a solitary thistle has been found*, although it has been carefully examined by those interested in testing its efficacy."

"I commenced about the first of June," said the late V. Yeomans, of Walworth, Wayne county, N. Y., "and plowed them about once a month, and harrowed them as often, till about the first of October. The result is, *their entire destruction*, except a few places where the plowing could not be well done."

Augustus D. Ayers, of Romulus, Seneca county, N. Y., says, "The field contained six acres, principally occupied with Canada thistles, on which a Florida war had been waged for twenty-five years or more, with little prospect of success or termination. In the latter part of May I broke it up, plowed the ground deep four times, and harrowed it in the heat of summer. The result was, it *killed the Canada thistles*, and my ground is in good condition for after cropping."

An experiment of this kind I also tried myself on about four acres of Canada thistles, by causing the ground to be plowed thoroughly four times during the season. The occupant, who bought the land that year, informed me that none appeared the following season.

The importance of doing the work well, and of cutting off and deeply burying every plant, must be obvious; and the superiority of throwing them so far under the surface as to require a month for them to creep out, over a mere skimming of the surface with the hoe, or cutting them off above the surface with the scythe, must be also evident. A correspondent of the Genesee Farmer (vol. 4, p. 324,) killed a patch by hoeing them to the surface *twice a week*; but he worked from spring till nearly the first of eighth month (Aug.) before each successive three days' crop began to diminish; after which, by closely following their retreat, they rapidly disappeared. But they had a much better chance to *breathe* in this case, being a part of the time above ground, than when kept wholly under by a deep plowing as soon as they made their appearance above the surface. Such treatment would prevent the necessity of taking up and *burning* "every plant and vestige of the root," as Dr. Smith recommends in the article above alluded to, which in large patches, where the roots often run several feet below the surface, would be wholly impracticable; or of pulling up every shoot as soon as it appears, "*for seven or eight successive years*," as Loudon recommended,—the phrase "as soon as it appears," meaning probably from one week to one month, or more; for it is impossible for *any* plant to live *wholly* beneath the surface for half that term of years. J. J. T

DISEASE OF THE POTATOE.

Mr. Tucker—The subject of the disease which last year prevailed so universally among potatoes, is one which has very naturally and properly called out the the inquiries and conjectures of many investigators, and as yet no particular cause for its existence seems to have been concluded upon by the mass of cultivators. Some suppose that the membranes of the leaf are destroyed by an insect, and that the work of decay originates in this cause.

But of this theory for it is theory and nothing more, we are prepared to say, that we saw, (and so did every observing farmer, we must think,) hosts of small, black flies infesting potatoe fields, in years long before we ever heard of the disease in potatoes, and the usual consequence was, that the membrane of the leaf was eaten out, as somebody, in some particular instance, saw it last fall. Then, again, in proof of the innocence of the poor insect, (who is certainly driven to rather hard fare, even for a mischievous fellow,) in this matter, we must say that we saw with our own eyes, and no mistake about it, leaves of potatoes after they had become dry by the disease, as perfect in all their parts as any potatoe leaves we ever saw. Others are of opinion that the cause of the disease is owing to the "influence of a worm in the root," but we have seen no statement of such animals being found in such locations until the disease had made some progress, so there must be some doubt in the case as to whether the worm does the mischief, or is attracted by the consequences of its having been done to feast on the corruption that ensues.

Last fall, we ventured an opinion on the cause of the disease which as yet we have found no cause to relinqnish, but on the contrary, from the facts we have collected and observations we have made, we have become more tenacious of its correctness. It was simply this, that from some cause which we did not then and cannot now define to our own satisfaction, the potatoe vine was attacked with a rust similar to that we frequently see on the straw of rye and wheat. That in the case of the potatoe, it first showed itself in a very small blotch on the side of the stalk, which continued to spread until it had gone round and through the stalk, when the latter, at the particular point of disease became dry and hard as though it had reached its maturity. The death of the top of the stalk of course soon follows, but the lower part remains green for a while. The conjecture, (it was mere conjecture) we threw out, was this, whether the sap which was now stopped by the dryness of the stalk in its usual channel of circulation, and, of course, prevented from passing into the leaf, its natural laboratory for preparation to return to the tuber and fulfil its accustomed service in giving it nourishment, did not necessarily return prematurely, and either from excess of quantity, or by bringing back some quality which had better been given to the winds, induce the disease in the tubers? Our own potatoes were too far gone to experiment much upon, when we, surprised with the novelty of the action, hit upon a single plan to adopt. It appeared to us however, as soon as we saw *how* the mischief was progressing, that mowing the tops was the best and perhaps only efficient method to pursue. A neighbor, whose crop was smitten long after our own, tried this experiment, by mowing about half a field, as soon as the tops exhibited symptoms of the disorder, and the result was satisfactory and cheering. Where the tops were so mown, no appearance of the rot was ever discovered, and the potatoes gave all the evidence of maturity which the circumstances of the case could possibly admit of, while the other part of the field suffered as much from the rot as any in the vicinity. Here, then, is one instance in favor of our theory.

Other experiments were tried, of which we shall cite but one or two. In one case, a farmer dug a very few hills when the vines first showed symptoms of disease, and carefully buried them and let them remain until the usual time of digging, when they were taken out all sound, while the most of his crop had suffered essentially. There can be no doubt we think, that when potatoes are dug so early as the rot came last year, but that they must be put in small bodies and kept cool and excluded from the atmosphere. Their tendency to heat, and thus become heavy and insipid, warrants us in that conclusion, and so we infer that the letting them remain in hills with the tops taken off, until the usual time of digging is a much cheaper and better way than to dig and put cellars, or on floors in piles.

Another course of proceeding which has come under our observation, was adopted by some Irishmen, who had known this enemy to their favorite esculent "in the old country," and which it may not be useless to mention. When they saw the crop smitten, they dug it immediately, and piled the potatoes on the surface of the ground, taking care to guard them from sunshine until the job was completed, when they covered the pile entirely with clay. The result was probably as they had known it to be aforetime. Their crop was saved and their potatoes of *good* quality. The clay, undoubtedly acted as a two fold agent, kept them cool and excluded the atmosphere and storms.

We have only to say, in conclusion, that if any one can confute any point we have advanced, we shall be happy to have them do it. Truth and light are what we are looking after in this matter, and if we have advanced an error, the public good requires that it should be set right. And especially does the agricultural interest of our country require that this pestilence which made such rapid strides in its advancement the last year, should meet with hot pursuit by every philanthropist, until its progress is stayed if not effectually stopped.

Yours truly, W. Bacon.

P. S. There have been many experiments in planting potatoes tried in this region, this spring, with reference to preventing the disease. If any thing of importance results from them, I shall give due notice.

Mount Osceola, Mass., June 22th, '45.

THE SUGAR CANE.

L. Tucker, Esq.—In case you do not possess a better treatise on the subject of sugar cane, you are at liberty to use this as it may interest Mr. McDonald, noticed in the May number of the Cultivator, page 151.

Sugar cane designed for the plants are cut before frost; usually early in Oct., and either planted immediately or put down in matelas or beds from one to two feet thick, like shingling, with the tops uppermost in order to protect the stalks and eyes from freezing. Cane may be planted in the autumn or any time between September and March. The usual time is after rolling, or sugar making, in January and February. When planted the leaves are taken off.

The ground is well plowed, and if rough, well harrowed; after which, it is laid off in furrrows with a plow, from four to six feet apart, as scarcely any two plants are alike and the cane is laid lengthwise in the furrows. A single stalk is by some deemed sufficient. I would prefer it double, with all the eyes sound. Long cane is better cut in two or three pieces. It is then covered with the hoe or plow from one to three inches in depth. Light covering would be preferable were there no danger from freezing.

After the winter is passed the cane is bared on each side with a plow, throwing the furrow from the cane; and the cane is now scraped with the hoe; taking all the surplus earth from over the cane—leaving the cane near the surface, in order to promote early vegetation.

It is now kept clean from grass and weeds until it has suckered or stooled sufficiently thick to produce a full stand; soon after this, say last of May or in June, it should be hilled from three to four inches and laid by and unmolested till ready to harvest or cut for the mill.

Allow me here to say, the ground, when planted, should be so thoroughly ditched and cross furrowed, as not to allow any water to stand on the surface of the field or ground. Three cart loads of cane may plant an acre single, but we are not governed by loads. Cane ripens or matures usually from three to six or sometimes or seven feet high, commencing from the bottom, say in August or September, and ripens about a joint or six

inches a week till injured by a freeze. The frost does not injure it.

It is first cut or topped as high as the leaves are dry say under the green leaf, and the top is thrown upon the ground as useless, or is often winrowed or put up for plants where plants are scarce. The leaves are stripped from the cane already topped, and the cane is then cut with a cane knife close to the ground, put in carts and carried to the mills. The cane is then usually placed upon a carrier, made of two endless chains, connected to each other by wooden lats, forming a band of from two to four feet in width, forming an inclined plane; carrying the cane up to the mill, and dropping it in the hopper, just as fast as the mill, which is somewhat similar to a rolling mill, rolls the cane, and thereby expresses the juice, which runs into receivers; and the sooner it is put in the kettles, boiled, skimmed, and concentrated to syrup or the striking point, the better.

As it is presumed no one will undertake to make cane sugar without first seeing the operation or procuring the assistance of one who is experienced, I deem any further information unnecessary.

In conclusion, permit me to say, scarcely any two think alike on the subject.

Respectfully yours, S. TILLOTSON.

New River, La., May 23, 1845.

NOTES OF TRAVEL IN THE SOUTHWEST—No. V.

BY SOLON ROBINSON.

On the 4th Feb. Mr. R. crossed the Misssissippi, at the "Iron Banks," marked on the maps as Columbus, Kentucky, built between the river and a hill some 200 feet high, composed of clay, lead and iron stone, and up which the road leads to an entire change of soil and description of country from that on the opposite side of the river. Here the face of the country is quite broken; soil rich clay; timber, beach, sugar, poplar, oaks, hickory, dog-wood, &c.—all of which indicate a good strong soil, *and good* grass land; yet it is not here, notwithstanding this is the blue grass state.

But here is not to be found the same kind of population that is to be found in the blue grass and stock raising part of Ky. The crops here are corn enough to eat and feed through the winter, and tobacco enough to sell to buy the few necessaries required. The farms are small and houses generally poor, and here as in Missouri, always something out of order—stables without doors—farms without gates—and whole neighborhoods without a good head of cattle, horses, hogs or sheep. There is in this part of Ky., an abundance of most excellent land, tolerably heavy timbered, that can be had for about $2 an acre, out of which excellent farms could be made.

On the 5th, Mr. R. passed into Tennessee—the land similar to that described yesterday. The best buildings are the towering tobacco houses, in which the crop is hung up, as soon as it is cut and wilted, where it hangs to dry, and is then "fired."

The great pest in the cultivation of this crop, are the worms that prey upon the leaves, and unless destroyed, will destroy the crop. The eggs are deposited by a miller almost as large as the humming bird, and very much resembling it in movements, upon the upper and under side of the tobacco leaves, from the time it is about half grown till it matures. These hatch and grow "powerful quick," and eat "powerfully," and have all to be picked off by hand; though some have trained turkeys to perform a part of the work. In cutting up the crop, the laborer seizes the stalk with one hand, and splits the stalk nearly to the ground with a stout butcher knife, then cuts it off and throws it in piles to wilt, which it will do in a few hours, when it is hauled to the house and hung across sticks in the upper tier and so down till the beams are full; when it is sufficiently dry, large fires are built on the ground so as to give as much heat as possible with little blaze or smoke. This is a dangerous operation and accidents often happen. After it is thus cured, it hangs till a wet spell moistens it so that it can be handled to strip, or if the room is wanted, it is taken down and bulked away to make room for the next cutting. The crop avarages about 800 lbs. to the acre, worth 2½ to 3c., and 2 to 3 acres to a hand. As a matter of course when tobacco is the general crop, the land is rich; yet generally speaking the people do not appear so in this part of the country.

Although here is nothing but corn and fodder, yet stock looks better than in Missouri. Pretty good oxen with miserable yokes and bows, are worked upon more miserable carts In act all the farming implements are of the roughest kind—even brooms, that indispensible article with a yankee housekeeper, are not to be found, unless you are pleased to denominate that miserable little switch of broom straw with which you see a negro poking about the floor as though looking for dropped pins rather than sweeping, by the name of broom. Perhaps you may think the floors are all carpeted—on the contrary I never saw the first one of these household comforts.

This district is a natural "eccalobion" of swine, and needs no artificial hog hatching machine to encourage the natural increase of pigs. With little feeding and less care, particularly when "mast" is plenty, they live, move have their being, independent of their owner, but who nevertheless is dependent on them for his living.

The western district of Tennessee contains an abundance of most excellent land, yet covered with the native growth of forest trees, mostly oak, except upon creek bottom land, and occasionally upon small tracts of upland; where all the kinds of timber usually found upon the richest alluvial land of the west, grow in the greatest luxuriance; requiring a great deal of hard toil to prepare it for culture, but affording an assurance to the husbandman that when once cleared, he will have a soil that no judicious system of culture can ever wear out. But I am sorry to say that that system however, is not pursued generally, as can be seen in the fact after a few years of "skinning," it becomes too poor to produce a good crop of tobacco, and therefore the tobacco planter is annually making additions of new land instead of trying to keep up the fertility of that which was first cleared. Tobacco is a very ameliorating crop, and leaves the land in fine condition, particularly for wheat; which crop however, is but little cultivated, for two reasons—first, the tobacco crop in "wormy time," requires every pair of hands on the plantation that is able to crush a worm, at the very time too when the wheat needs an equal amount of care to save it from total destruction by the weevil, which often destroys the crop even after it has been thrashed and cleaned and stored away. And secondly, the tobacco is a more certain crop in growth and sale for cash, which is the grand desideratum, and which will be sure to prevent the cultivator from bestowing any care towards the improvement or preservation of his soil in a country where new land can be purchased so cheap as it can here, when that first cleared will no longer produce his favorite crop.

On the 7th of Feb., between Dresden and Jackson, Tenn., I began to leave the tobacco and enter among the cotton plantations, the soil becoming more sandy and light, though not showing much more appearance of wealth until within the precincts of the latter town, which is beautifully situated upon a plain, and contains some 1,500 inhabitants, and many handsome mansions; a very fine court house and a college and a flourishing female school. Leaving this place a short distance from the town, we cross the "Forked Deer Creek," over a toll bridge and high clay turnpike over a two mile wide bottom, subject to overflows, and covered with beech timber, which if cleared off and set with grass, I venture to say would prove more profitable land than some of the upland. I notice generally that the bottoms are the last to be cleared, but time will prove their value. Out of this stream, the cotton from this region is sent in flat boats to the Mississippi. Between this town and Lagrange, the last town in Tenn., the land grows more and more sandy, and when badly cultivated, is very liable to wash into gullies; some of which, particularly by the road side, becomes perfectly unmanageable. Passed fine cotton plantations, and some very good and some I think very poor land, covered with small black oak tim-

ber, and crossed the Hatchee river, which in high water is navigable for steamboats, and like nearly all the streams in this country, having a wide overflowable bottom. We are now fairly entered upon the cotton region, that being the all engrossing crop of this part of Tennessee, and of which I expect hereafter to have much to see and say as I proceed south.

This, 9th of Feb., four miles south of Lagrange, upon a very warm sunny day, I crossed the Mississippi line. The grass to-day looks green and spring like, and plum trees are leaving, and peach buds are just ready to burst into blossom. Much land shows that there has been a good deal of a kind of work done that people really seem to be in sober earnest when they call it "plowing." The weather is more like May than February. Birds and frogs making meloby--grass growing--flowers blooming—gardens making, etc.

From here to Holly Springs, the county seat of Marshall co., and a flourishing fine town, the land grows hilly and sandy, and bottom lands more swampy. The upland timber mostly black oak, interspersed with white oak and hickory, and much of it uncultivated. Some fine farms—horses good—cattle poor and sheep poorer. In the course of the day after passing Holly Springs, I met with the first stone that I have seen since leaving the mountains of Missouri. It is a kind of redish sand and iron stone, and has the appearance of being of volcanic origin. Passed Oxford, the county seat of Lafayette co., and crossed the Tallahatchie river, (I like these Indian names,) which is also another high water steamboat stream, with wide bottom uncultivated beech land, upon which grass instead of trees ought to be growing. Saw mills through all this region being scarce, and lumber from $1.50 to $2.50 per hundred, nearly all the houses are built of logs. Near the south line of Lafayette, crossed the "Yokenatuffa," (a very pretty name when you get used to it,) across a beech bottom, with a liberal sprinkle of the beautiful holly.

On the 12th day of Feb., in Yallabusha county, I saw peach and plum trees in full bloom, and garden peas and potatoes up, and oats sowing. And here in one field I saw 20 one horse, or one mule plows, skinning the surface of this light, loose, fine, sandy soil, and sending it on a voyage of discovery to the gulf of Mexico. And as in this country I am going to initiate my readers into the arcana of a cotton plantation, I will here part company with them, under the assurance that the country we are yet to ramble over will afford an abundance of incidents far more interesting than that which which we have hitherto visited; and I humbly hope that I may be able so to collect and arrange those incidents that you will be pleased to continue to give a monthly welcome to the familiar face of your old friend,

SOLON ROBINSON.

WATER FOR STOCK—CEMENT PIPES.

MR. TUCKER—Few articles interested us more, in your last volume, than the editorial of the March number, upon the importance of water for stock, and the most efficacious and economical means of procuring it. It is surprising to see how many farmers leave their stock to suffer, and how many inconveniences they submit to, year after year, in this essential matter. It is worth any farmer's while to incur the expense of a pretty deep well, or several cisterns, rather than drag along, year after year, as many do, with stinted rations, because it is so far to bring it. Cisterns are preferable, and generally furnish an adequate supply, if buildings for shelter bear any proportion to the stock kept.

But when thus obtained, the labor of raising it is considerable, and is a serious objection with many. In some cases a daily pumping by the hour would be required. This might generally be avoided by constructing the cistern in a knoll or bank, above the level of some part of the yard, to which it could be conducted in pipes, and let off at will, by a turn of the finger, through a stop-cock or fasset. In the first instance this would be less expensive than a pump, save the daily labor of working it, be less liable to get out of repair, or freeze up, and in every way to be depended on in all weathers and seasons. Where such cisterns are not practicable, they might be placed within the building and made secure against frost at a small expense.

But after all, where the farmer has a stream or spring within a hundred rods, he had better bring it to his yard than rely upon well or cistern. He will then have healthy, living water, better than that from any cistern or well tainted with filtrations from the yard above. Where the supply lies above the yard level there is no difficulty; and when it is below, either wind or water will raise it by means of forcing pumps, at an expense of less than $20, in either case. When wind is used, a reservoir will be necessary to hold a supply during a "calm." Your readers can get a good idea of either method by consulting the Cultivator, vol. 7, pages 47 and 174.

Heretofore the pipes or conductors have been very expensive, and when some farmers have almost made up their minds to take the matter in hand, and free themselves from their inconveniences, visions of logs and lead rise up before their eyes, and they are deterred by the expense attendant upon either of these modes, from doing anything. At least, so it was with us. We had a running stream within a short distance; but your plan of a cheap, home made, cement pipe was not known in this region till brought to notice by the Cultivator. But then there was that (to us) foreign substance—water-lime—to be obtained from the city, at an expense of about 37½ cents per bushel, including transportation and the trouble of procuring it.

Notwithstanding, the *plan* appeared so simple and cheap, and as the whole labor could be performed by ourselves, so I determined to try the experiment with our own lime. I was led to this by a statement that water-lime owed its hardening property to magnesia, of which our lime-stone contained about the same—forty per cent—as the Ulster county lime. This has also been ascribed to silica and oxide of iron. I have since purchased and read Johnston's Chemistry, and the same thing is said there of magnesia, page 367; and yet in a note, page 365, three different water limes are mentioned as having no magnesia at all, but a large per cent of alumina.

In order to test the question in my case, I took four parcels of lime, duly numbered and marked, placed them under water, and in a few weeks found the parcel mixed with an equal quantity of sand, had hardened so as to satisfy me of its fitness for my purpose. The other parcels of mortar had, some more and others less proportion of sand. I accordingly used it, half and half of each, sifted, to get out unslacked lumps of lime, pebbles, &c., and laid it down immediately. The lime was just burnt, and no doubt would have hardened sooner if ground, as I have since ascertained they would have been willing to do at the plaster-mill. I would advise this whenever farmers undertake to use their own lime for cement, although slacking with water may answer, as it did with me.

Upon examining the pipe this spring, after having a full run of water through it all winter, I found the inside as hard as stone, and not washed or worn in the least, as I feared it would be in its new state. I am satisfied this kind of pipe is just the thing for farmers—cheap and durable—conducting the water without taint or defilement from rotten wood or metallic poison, and needing no repairs when properly taken care of. An inch, or an inch and a half bore is large enough for any ordinary farm-house or yard. I used a rod about an inch and a quarter in size, and five feet long. I thought the short rod you prescribe much too tedious; and I also prefer a ball to the tapered stick you mention, to draw after the rod, in order to smooth and equalize the tube. The long rod should be tapered at the end, a hole bored an inch therefrom, through which to fasten the ball with a strong rope-cord five feet long. Two boards, five feet long and six inches broad, with fastenings, constitute the whole apparatus.

In constructing the work it is best to have it in about four divisions, and the same number of apparatus; begin at the lower end, lay a section on each of the divisions, and then the first will be hard enough to draw the rod; thus the work can proceed without delay for it to harden.

Care must be taken that the rods be not left too long. When bringing the divisions together, a short rod must be used and the joints closed up with a length or two of bricks. When any stoppages afterwards occur, and they will sometimes happen, by taking off the top brick in these joints it can be ascertained in which direction the obstruction lies. Then, by boring with a small gimblet, or some similar tool, the exact position can be ascertained. When the pipe is opened, and it is removed, a thin wooden pipe can be inserted and plastered over with a thick coat of mortar, and the pipe be as sound as before. These stoppages are extremely vexatious, and the head of the pipe should be well guarded with a tight box, and punched tin or sheet iron on three sides. Sometimes small tadpoles or frogs, and other water vermin, get within the tube, where they may grow larger, till they cannot get out, and are a moving obstruction from place to place, which it is exceedingly difficult to remove, without taking up the whole pipe, or one of the divisions at least. The holes in tin or sheet iron should be of the smallest practicable size, and very numerous, that the entrance of these intruders may be prevented.

In digging the trench endeavor to have no part lower than the point where it runs out, even if it must be a little farther distance round. This is necessary in order to have a straight, strong current right through to carry out any sediment in the water, lest it settle in the lowest part of the tube and prove a stoppage. I erred in this matter, having come across a hollow to save distance. Where this cannot be avoided there should be a joint or opening from which the sediment could be removed from time to time as it collects—say once a year.

A short story will tell the tale of expense. With a bushel of lime to every rod, a like quantity of sand, and a man to mix and carry mortar, I am satisfied I can lay more than twenty rods per day. The bill is as follows:

20 bushels of lime and sand,...	$3 00
1 hand to tend, ...	75
Preparing apparatus and laying down pipe,.....	1 25
	$5.00—25 cts. per rod.

Our mechanics here want 60 cents per rod for putting down logs, with timber, hands, board, &c., all found them—in all, probably about $1.25. I have made no account of digging the trench, for that is about the same in all cases, whether wood, lead or cement be used.

My experience has made me the warm advocate of cement pipes, and I can see no reason why any farmer should be without running water in his yards, if there is a spring or stream within a quarter of a mile. Even where water-lime must be had, the expense need not much exceed fifty cents per rod.

And now, Mr. Editor, if this statement shall induce any of the readers of the Cultivator to avail themselves of the advantages of cement pipe, I shall enjoy an extra satisfaction, over and above that experienced during the past winter, in seeing our stock so conveniently provided with this great essential to their thrift and comfort.

A. R. D.

Hagerstown, N. J. July 2d, 1845.

ERROR CORRECTED.

In the last volume of the Transactions of the State Agricultural Society, the opinion is advanced, in the essay on the Cultivation of the Apple, that all the varieties of this fruit originated from the native species in England, known by the name of *the crab*. This opinion, it is true, has the authority of the most of modern botanists to support it, and nearly all horticultural writers; but errors are often copied from one to another, without sufficient examination. Great men sometimes make great mistakes; and Professor Lindley, one of the highest botanical authorities in Europe, not only considers the apple as an improved variety of the crab, but speaks of the Green gage and other plums as having originated from the "Savage sloe," although the cultivated plum, or *Prunus domestica*, is a species totally distinct from the sloe, or *Prunus spinosa*.

Ray considered the English Crab as a distinct species from the cultivated apple. And those who regard them as only varieties, give distinctive characters more striking and permanent than many which separate species universally admitted as distinct. They are the following:—

CRAB TREE. Leaves ovate, acute, villous underneath; styles bald; fruit the size of a chestnut, acerb, astringent, austere.

APPLE-TREE. Leaves ovate-oblong, acuminate, glabrous; styles villous; fruit more or less sweet.

Whether these characters be admitted as sufficient for separate species or not, one fact must be admitted, that although the crab has grown in England from the remotest antiquity, no variaton in it whatever has taken place; while the cultivated apple appears to have been unknown there until it was introduced by the Romans, and is well known to be subject to interminable changes.

It will be borne in mind that the American crab is a totally distinct species from the common apple, and from the English crab.

J. J. THOMAS

Macedon, 6 mo., 1845.

DAIRY—QUALITY OF MILK.

In many parts of the country the dairy is such an object, and it is so desirable to have a living machine that can convert, in abundance and perfection, the food it consumes, to so useful, so profitable, and so essential an article, as milk, that the breed the most distinguished for that property must always be in great demand. But whether a particular breed should be kept entirely for that purpose, or whether it is preferable to have stock partly calculated for the butcher, and partly for the dairy, is a point well entitled to the most deliberate consideration. It is probable a breed might be reared by great attention, the males of which might be well calculated, in every respect, for the shambles; and the females of which might when young, produce abundant quantities of good rich milk, yet when they reached nine or ten years of age, might be easily and quickly fattened. This would be not only the most desirable, but the most valuable breed that could be propagated, and from an experience of fourteen years, we have found the Durham Short Horned breed as aproximatting the nearest to that point; but they require as a condition, an abundance of rich, succulent food, and warm, comfortable quarters in winter.

One good cow full fed is worth more for the dairy than four ordinary half starved ones. As an illustration of the truth of the above fact, we quote the following from an English publication. "A farmer, some years since, kept *eighteen* cows upon a *common*, and was often obliged to buy butter for his family. The common was *enclosed*, (which deprived the farmer of his pasture;) and the same person supplied his family amply, with the milk and butter from *four* cows *well kept*."

An ordinary cow fed on young clover should give for the first three months after calving, from fifteen to eighteen quarts of milk per day, which will produce, if of good quality, $1\frac{1}{4}$ lbs. of butter—or nearly 9 lbs. per week. Where the number of cows is greater the average will be less, because where there is only one or two cows, a deficiency in one of them is immediately noticed; the cow is got rid of, and a better one substituted.

The excellency of a dairy cow is estimated by the quantity and the quality of her milk; and the quality of the milk is estimated by the quantity of butter that it will yield. Much depends on the quality of the food, but more on the animal. The writer has known one cow whose milk would not produce butter, and never was discovered while milked with the herd, but was soon apparent when separated and milked alone.

There is a simple instrument, called the Lactometer, used for measuring the relative qualities of cream which the milk of different cows, at the different seasons of the year, affords. It consists of a mahogany stand, supporting six glass tubes of equal length and diameter. These tubes are marked ten inches from the bottom, and graduated down in 10ths of an inch for three inches. Now, the milk from the different cows is poured into each tube,

(which should be marked with the name of the cow,) and filled to the upper or ten inch line, and the number of degrees the thickness of the cream occupies in each tube, indicates the per centage. For example, if the bottom of the cream stands at 1 inch, if denotes 10 per cent. cream.

In a trial, with one of these instruments, of seven cows, six weeks after calving, in the months of March and April, we found they varied from 13 to 7½ per cent. Out of the seven cows the milk of two produced, after standing twenty-four hours in a temperature of 48 degrees, thirteen per cent cream—one twelve and another eleven per cent, in the same temperature. Another at 46 degrees 9 per cent, while two at 40 degrees stood at 8½ and 7½ per cent. The milk of four cows mixed, in a temperature of 48 degrees, marked 11 per cent. Now, it is well known by those have paid any attention to the subject, that temperature has considerable influence in raising cream, which may, in part account for the low per centage of the two last named cows; but in other trials we have found they varied from 7 to 20 per cent.

After comparing the accounts given in a variety of places and situations of the average quantity of milk which a cow gives when kept alone, and well fed as they generally are, with a full supply of food, such as they relish, to the extent of their appetites, the result is, that it greatly exceeds that of our best dairy herds, and the quantity of butter made from a given quantity of milk is also greater.

I am aware that high feeding of milch cows on grain, is not generally believed to be profitable, but I am satisfied that the cows would give milk nearly the whole year, be made good beef at the same time, and their calves would be much more valuable.

If cows are ever allowed to fall away low during winter, in vain shall we hope to obtain an abundant supply of milk by bringing them into high condition in the summer; for if a cow be lean at the time of calving, no management afterwards, will ever bring her to yield for the season anything like the quantity of milk that she would have done, had she been all the while in high condition. C. N. Bement.

American Hotel, Albany, August, 1845.

AGRICULTURE AND MINES OF N. CAROLINA.

Having passed over the principal part of this State during the last year, I have thought perhaps it might interest some of your readers to give a sort of flying account of it. This State possesses as many natural advantages as any other in the Union. The eastern part of it has large and extensive fisheries for herring and shad. The planters who live on the coast and on the banks of the rivers, nearly all fish during the season. The offal of the fish is used by them as manure. This, together with the shell marl beds which are found in all the lower counties, enables the planters to make large crops of corn, wheat and cotton. The marl, however, is not yet much used, as its application is not well understood. The land is generally low and level, formed of a deep alluvial bottom, and strongly acid. About five feet from the surface the formation of shell deposit commences, and extends in some places to the depth of ten feet. The marl laying so near the surface, renders its application easy, which would neutralize the acid and render the soil more friable. Large tracts of land, which will now hardly bring weeds, by a good marling could be made to produce heavy crops. The county of Terrel is celebrated for its grapes and Scuppernong wine, several thousand gallons of which is made every year, but mostly for home consumption. On the bank of the Cape Fear river some attention is paid to the culture of rice; the fields are quite extensive and very handsomely laid out. The lands in the western part of the State are generally good, especially when you approach the mountains, and nearly all the counties west of Raleigh, are rich in minerals; several extensive gold mines are in active operation, and pieces of native gold have been found worth seventy dollars. In Davidson county there are some silver mines which are worked daily with from fifty to one hundred hands, yielding a good profit. Copper mines are numerous, but little or no attention is paid to them, as the process of smelting is not understood, and the transportation of the ore too expensive, with the present state of the road, to send it to market. A survey of turnpike roads was ordered by the last Legislature, and as soon as it can be completed there is little doubt but that copper mining will be found as profitable as the others. The principal crop of the mining region is cotton, but the low price and the distance from market, has caused many of the planters to turn their attention to mining, which will shortly prove very lucrative. There is great want of labor-saving machines here, both in mining and agriculture.

Your paper has a good circulation in North Carolina, and its effects are plainly to be seen. Almost every intelligent planter will *tell you*, or *show you*, something that he has learned from the Cultivator. The low price of lands, and the facility with which they could be improved offers great inducements to emigrants, and the investment of capital in this state.

Your friend, John C. Mather.

Raleigh, North Carolina, July 14th, 1845.

LETTER FROM DR. LEE.

The Dairies of Chenango County—Science of Agriculture—The Crops.

Smithville, Chenango Co., N. Y., July 15, 1845.

This county has long been noted as a good grazing district, and admirably adapted to the production of butter, cheese, beef, mutton and wool. Its broken surface and high hills seem to attract clouds loaded with vapor and rain, which, falling on the most elevated points, irrigate the whole district, and sustain numerous living springs. Pure cold water and a plenty of it, may be regarded as indispensible to the dairy business. In limestone countries, the rocks are so full of seams and cavities that most of the water which falls in rains soon finds its way so far below the surface that the roots of the cultivated grasses cannot reach it. On the side hills and in the valleys of Chenango county, the grass is remarkably green and luxuriant for this season of the year; owing, mainly, to an impervious subsoil, which keeps the water near to the surface.

I have visited a number of fine dairies. In several, the butter is contracted at 13 cents a pound. The expectations of the cheese-makers are pretty well raised, in view of a better market in England than they have realized at home. In large butter dairies the cream or milk is churned either by water power, or the weight of a large dog or sheep walking on an inclined wheel. A sheep that will mate with cows, churn 30 or 40 lbs. of butter a day, and yield its owner 5 pounds of good wool a year, is truly a valuable animal. There are such in this county, which run and jump on a tread-wheel and churn for an hour with more spirit than any boy or girl that I ever saw attempt to extract 20 lbs. of butter from a churning of milk or cream.

Pans of milk set for the cream to rise should be placed not on board shelves, but either on cool flat stones, or on *slats*, so that the cool air can circulate under the bottom of the pan as well as around its sides. A well flagged stone or brick floor, moistened with cold water, keeps down the temperature of the milk house The butter is worked over by a machine which I will not attempt to describe, that manages 40 lbs. at a batch, and does its work much easier than a ladle. Ground Turk's Island salt, or Liverpool, is preferred, and generally used. The cows are never left in the yard over night, and never denied a plenty of good fresh feed.

The shale and sand stone rocks of this region seem to yield, as they are decomposed, lime, potash, soda, magnesia, clay, silex, chlorine, sulphur, phosphorus, and the oxide of iron, enough to produce good crops of *grass*, but not enough of all these minerals, to make good crops of wheat. If we analyze the ash of timothy, which grows so luxuriantly in this section, and that of a ripe wheat plant, we shall find that the simple minerals contained in both are precisely alike in character, but very unlike in *quantity*. Thus, if 100 ounces of dry wheat, carefully burnt till all the organic mattter—carbon, nitrogen, and water—are driven off, there will

remain some two ounces of ash. If we test this for phosphoric acid, it will yield, according to Boussingault, 47 per cent. of that substance. To make an acre of wheat plants sufficient to yield 20 bushels of grain, the seed must have 12 lbs., and the straw 5¼ lbs. of phosphoric acid. A good crop of timothy will require only one third as much phosphorous. If the bone earth, (phosphate of lime)—which enters into the organization of two acres of grass, were added to an acre that already had one third enough to give a good crop of wheat, undoubtedly such a crop could be grown. Pure carbonate or caustic lime will not answer to form bones. And as the skeletons or bones of corals and shell fish do not abound in the shale and freestone rocks, which live south, and above the limestone strata in this state, we see why the soil in the southern tier of counties will yield an abundance of such plants and seeds as require but little bone earth, while such as need, like kernels of wheat, 47 per cent of phosphoric acid to combine with their alkaline minerals, can not flourish. Lime, potash, sulphur and ammonia, are very useful, nay, indispensable to the production of wheat, as well as corn, oats, grass, and potatoes; but they are all alike valueless and unavailing if the soil contain no *phosphorous*. Those lime and shale rocks that most abound in organic remains are richest in phosphates. Hence, in selecting lime stone to be burnt for agricultural purposes, such as contains most corals and shells should be preferred. All the salts which enter the mouths of our domestic animals should be saved as they escape from their bodies. The supply of these minerals, without which we could raise no food for man or his cattle, is not inexhaustible. Give me a plenty of bones, potash, common salt, and plaster of Paris, and I will find sand, clay, iron, nitrogen, and carbon enough in any soil in the state to grow good crops of any plant adapted to the climate.

More than one half of the ash of potatoes is pure *potash*. Acting on this hint, I have found in my tour scientific farmers, who by the use of unbleached ashes, lime and plaster mixed in equal parts and placed *in the hill* with the seed, and *on the hill* as soon as have wholly escaped the pototoe rot, and harvested for several years, from 500 to 690 bushels per acre.

In transforming carbon and water into starch, not only in potatoes, but in the seeds of all cultiveted plants, *potash* plays an important part. In changing vegetable acids in unripe fruits, like green grapes, cherries, and apples, into grape, and cane sugar, the agency of this alkali is no less controlling. A sugar maple, a grape vine, an apple tree, and a potatoe plant need a soil that abounds in potash. Take from your fields 200 bushels of potatoes this fall, and you will remove from it sixty three pounds of this mineral. One bushel of ashes, by those that have used them, are said to make ten extra bushels of potatoes.

I am happy to see a growing interest every where taken, by plain, working farmers in the science of their noble profession. They fully comprehend that it takes many *things* to form a single blade of grass; and that these things must exist *somewhere*. To be able to lay one's hand on to every substance that makes grass, grain, tubers, roots, milk, butter, cheese, wool, flesh, fat, and bone; and to know how to combine these substances in the best possible manner to accomplish the great purpose of the husbandman, are advantages of the highest importance to all practical farmers. The idea of creating potatoes, bread, or meat, out of nothing, by dint of blind, hard work, will soon give place to better notions of cause and effect. The light of modern science, which reveals the unerring laws of Nature, will soon force its way into the common sense and common practice of a large majority of New-York farmers. All admit that the laws of matter, which transform crude earth, air and water, into human food and raiment, are not to be despised by any tiller of the soil. Many study these laws, and work according to their dictates.

The frost has done much injury to timothy in this quarter, having killed acres so that it will not head out, nor yield anything but a light clip of mowing. Beech, and some other forest trees, have suffered pretty severely by the same blighting agent. There is no fruit except a few currants, that I have seen in the Chenango valley. This county gained only 17 in its population from 1835 to 1840. To give a few large sheep and dairy farms, many have sold and emigrated to the new countries of the west. Not a little flour which has crossed lake Erie is consumed in this county. Some are trying to raise wheat by the use of lime. If they would add salt, plaster and ashes, their success would be more signal. Urine should be applied to furnish the soil what phosphorus the lime and ashes might lack to make 30 bushels of wheat per acre. The plaster and urine ought to be applied together, and the salt, lime and ashes. Fifteen or twenty bushels of the latter compound would suffice for an acre, and three bushels of plaster. As a general rule a poor soil needs more than one, two, or three of the elements of plants, which number fourteen. Plaster and common salt yield four of these elementary bodies, and yet they furnish the hungry crop with no potash, no silica, no iron, and no phosphorous, which must be had, to say nothing of carbon, nitrogen, alumina, and magnesia.

D. Lee.

THE PEACH A DISTINCT SPECIES.

In *George Bancroft's* Address before our State Agricultural Society at Poughkeepsie, he asked, "Whose efforts led the way in changing the rough skin of the *almond* to the luscious sweetness of the *peach?*"

It is not surprising that the orator should have acquired this idea in the course of his miscellaneous reading, when such men as the late *Thomas Andrew Knight*, President of the Horticultural Society of London, was an advocate of this doctrine,—partly in consequence of some *hybrid* which he had produced between the peach and the *almond*, and partly because the *peach* is not mentioned in the Bible. He therefore concluded that the *latter* tree was only a variety of the *former*, and comparatively of modern origin.

Since the publication of President Knight's opinion, however, it has become known that ["the peach] is found *wild* in different parts of the Himalayas"*—the only country in which it is known to be wild; and also that a distinct kind—a new species—has been found in that region. These facts appear in my view to explain the silence of the Scriptures on this subject,—the peach not having found its way into Persia, nor the Jews become acquainted with it when those books were written.

The following arguments go to prove that the peach is a distinct species:

"Its *solitary* flowers constitute one of the most striking traits of its specific character,† while those of the almond are *in pairs*. These traits are given by botanists as constant; and though the inflorescence differs not, except in *number*,—yet *number* when constant, is freely and unexceptionably admitted into specific characters in other genera. In *Mitchella*, *Linnæa*, or *Xylosteum* no part of even the generic character is more unvarying than the *geminate* position of the flowers.

"A specific difference may also be shown from the numerous and multiform *varieties* into which the peach is annually spreading, when contrasted with the more permanent character of the almond. A case nearly parallel may be found between *Ribes rubrum* (the common currant) and *Ribes grossularia* (the garden gooseberry). The former, like the almond, has not produced more than six or eight well known *varieties;*—while those of the latter, like the *varieties* of the peach, are too numerous to be recorded." *American Farmer*, vol. 13, page 323.

Another circumstance, which appears to have been strangely overlooked, is, that the *shell* of the almond splits open to discharge the nut, while the *pulp* of the peach has no determinate opening. This is not only sufficient of itself to show that they are different species, but also that they scarcely belong to the same family; and *Persica* has been proposed or adopted by Royle as the name of the new *genus*.

David Thomas.

Greatfield, Cayuga County, 7 mo. 8, 1845.

* *Royle's* Illustrations of the Natural History of the Himaylayan Mountains, &c.

† As given by botanists; but I consider the second argument not less conclusive than the first.

"HONOR TO WHOM HONOR."

In no part of the world is the effect of individual effort so signally illustrated, and in none is the enconragement so ample to make such effort as in our own country. The rewards of industry and perseverance are sure as they are great. Improvements in the various departments of useful labor are the happy result of such a state of things. These are seen in whatever pertains to agricultural and mechanical inventions; in the numerous *institutes, societies,* and *clubs,* all instinct with the desire and purpose to diffuse information and to devise expedients for increasing agricultural and mechanical industry and skill and thus add to the sum of individual and national wealth. But it may sometimes happen in relation to a given enterprise, that those who originally set the ball in motion, are overlooked in the ardor and *eclat* of subsequent advancement. This train of thoughts is the result of a recent interview with my friend Alexander Walsh, Esq., of Lansingburgh, who I was happy to find recovered, in some measure, from his severe attack of illness, and still regarding with his wonted interest the great cause of mechanical and agricultural improvement. Reminiscences of the past were freely indulged, especially interesting in relation to the rural department of the AMERICAN INSTITUTE. And the sentiment which I have placed at the head of this article, claims, in its application to Mr. Walsh that facts gathered from him be communicated to the public, as they exhibit his agency in originating or in giving an impulse to the rural department of the institute that has been increasingly felt from year to year until the present day, when the interest and value of those exhibitions are universally acknowledged.

About the year 1834, it appears Mr W. sent for exhibition by the Institute to S. Fleet, Esq., N. Y., now editor of the New-York Farmer and Mechanic, quite a number of rare plants. They came to hand in season, but perhaps because not properly brought to the attention of the Society, few examined them, and they were not publicly noticed.

From a conviction that Floral and Horticultural displays would greatly add to the public interest in the Fairs of the institute, another attempt was made by Mr. W. two years after the period last mentioned, to induce the managers to prepare a commodious room for the reception of plants, &c. At that time, such a room could not be obtained in any part of Niblo's garden, where the Exhibitions are held, but as a substitute some plank were nailed up among the pillars of the saloon, as being the only place that could be procured. The rough, unsightly fixture was immediately filled with the showy products of the gardens, and the display of fruits and flowers gave great satisfaction to the visitors. This prompted the society to efforts, at a subsequent festival, for obtaining a more suitable place for this part of their exhibition—and a room, in the language of Mr. W., "seven by nine," was eventually procured up stairs—invitations were freely sent out to many florists and gardeners to aid in the contemplated display, to which they promptly and cheerfully responded in a liberal supply of flowers, fruits, and vegetables. These were all arranged with as much taste and order as circumstances allowed, and the entire exhibition was an evident advance upon the one preceding; the small room was constantly crowded and its adornments received the most marked attention. The feeling thus manifested pleased the managers of the Institute, and they determined on the returning season to devote to this part of their exhibition, a large and handsome show room.

"Parva metu primo mox sese attollit in auras."

The time of the next annual festival came, such a room was selected, and Mr. W.'s highest taste and ingenuity were put in requisition for the display of the increased varieties presented of the products of the garden—fruits, flowers and vegetables, and of the farm, grain and roots. The arrangement of the products of the garden and farm, greatly enlarged in their number, and the variety of their species, was made with taste and neatness. Then in the centre of the room you beheld a beautiful fountain of several jets and continual flow during the exhibition, surrounded by several walks around which were orange trees adorned with fruit as well as other rare plants. There were also cast iron sofas, an article procured for the occasion, and that, on this account, became extended in their use, sun dials, resplendent vases, &c.; and the piano too was there, and music with her voluptuous swell, was heard chaunting the praises of agriculture, and singing the songs of Flora. These statements are but an outline. The scene was the favorite one of the exhibition—the resort of beauty and fashion—of wealth and intelligence. The increased number of visitors thus drawn to the fair, increased the inducements to agricultural and mechanical display in the succeeding year, and since that time, the fruits of human invention and discovery, in the shape of agricultural, gardening, and mechanical instruments, and apparatus of various kinds for uses almost without number, are now every year brought forward for display, and in the hope of obtaining premiums, and these with the fruits and flowers, poured in from far and near, form a most delightful commingling of art and nature, upon which thousands gaze with high satisfaction.

The *American Institute,* with its enterprising and public spirited managers, its conversational meetings, its useful publications, and its vigilant and fostering care of every useful improvement that is made in agriculture and the mechanic arts, has assumed a prominence and acquired an influence for good, doubtless, even beyond the most sanguine expectations of its early projectors and friends. While all must desire that its course may be onward to still greater influence and honor, it is fit also that the due meed of praise and of grateful remembrance be awarded to the men who early devoted their time and energies to its concerns, and whoever shall hereafter write a full history of its course, must include among their number, and honor with a prominent place the name of ALEXANDER WALSH. UTICA.

COARSE AND FINE WOOLS.

TO DR. J. P. BEEKMAN—The difference in quantity between coarse and fine wool has been exaggerated—I mean the quantity of clean wool produced from the same amonnt of feed. It is well known that the heavy fleeced coarse wooled sheep are much larger than the Saxons, and require feed in proportion; but the weight of fleece is not greater in proportion to the size of the carcase. The Merinoes cut a heavier fleece, but not so clean wool; the difference in amount of clean wool from sheep of the same size, and from the same amount of keep, is not so great as has been supposed. It begins to be understood by wool-growers that a fine fleece is not necessarily very light. A long staple is looked upon now by manufacturers with more favor than formerly; and it is found that a long staple is perfectly consistent with a fine fibre, and that long wool is less affected by the weather than short, as the fibres are affected only near the outer ends. A thick fleece is also better: first, because there is more of it, and second, because being less exposed to the action of the weather, it is softer.

Now these good qualities may be found in some families of the Saxons. It is not unusual for large flocks to cut from two and a half to three pounds per fleece; and thus where there are no fat sheep, or wethers over three years old, but ewes and young sheep, kept chiefly for their wool, and of course as large a number kept as consistent with the thrifty condition of the sheep.

There are many bucks from the flocks of Thomas W. Swift, of this town, which cut from five to six pounds, and more. This flock has given an impress to most of the fine wool in this place, I have a buck of the same flock, whose fleece this year weighed seven pounds fourteen ounces of well washed wool; he had been lagged also as is usual in the spring; he is three years old, a pure bred Saxon, and his wool is nice.

The Merinos are undoubtedly an excellent breed of sheep, and those families are probably to be preferred which approach the Saxons nearest in the fineness and clearness of their wool, that which wastes least in clensing. But a heavy fleece, without regard to the size of carcase, or grossness of the wool is not the sure criterion of a profitable breed. It is a maxim with farm.

ers, "As fine as you can, but heavy." Others reverse the maxim, but say the same thing—"As heavy as you can, but fine."

I visited the "wool depot" in Kinderhook with great pleasure. I venture to say that it would be difficult to collect seventy-five thousand pounds of nicer wool without making a particular selection. The manner in which it is washed, put up, and arranged, must make it an attraction to manufacturers.

I will only add that the sale of wool in this part of Dutchess county has been, for the best quality, not full blood, fifty cents per pound.

Yours respectfully, NEWTON REED.

Amenia, Dutchess County, July, 1845.

KILLING ALDERS.

We publish with pleasure the following article, though confessedly unprepared to admit the idea of lunar influence as therein expressed. The long experience of the writer, however, (he being, if we make no mistake in dates, in his *ninety-fifth* year!) renders his remarks valuable, and justly entitled to respectful consideration. We should also be pleased to receive any facts from others touching the same subject. If the result of cutting alders on any particular day has been demonstrated to be more effectual in eradicating them than when cut at any other time, it is obviously important that it be known. Establish the certainty of this result, and speculation in regard to the *cause* is unnecessary. The difference in the durability of timber cut at different times, is undoubtedly great. Our venerable correspondent intimates that he may "prescribe" a proper mode to be pursued. We should be happy to hear from him.

MR. TUCKER—In the Cultivator for June I observe, (page 195,) A. H. Halleck, Esq., says there is a certain time to cut alders to eradicate them. He might have added in *some years*, and rendered a reason. It is no new thing, for I have known it more than eighty years, and it is well known in Berkshire. My first twenty years I lived in Hatfield—(was Col. Partridge's ninth of thirteen children.) He had a pasture, two-thirds of which was almost level with the mill-pond—not miry, but as fine a place for alders as ever was, and also excellent for grass; so that on leisure days alders were cut, piled and burnt; but grow they would, and a perpetual war was waged against them. One day, (say in 1756, his two hired men cut near an acre, and not a sprout came. My father believed that it was owing to the time they were cut, but not noticed soon enough to be remembered. He being both a civil and military officer during the war with France for Canada, i. e., from 1755 to 1761, his house was ever thronged with company, and from all parts of the country; and he did not forget to inquire for a time to kill alders in his favorite horse pasture. In about two years, a man told him that Dr. Elliott, of Guilford, Ct., had, in a small treatise on husbandry said, to cut alders in the old (or wane) of the moon, having the sign in the heart, (i. e., when passing Leo,) *they would bleed to death;* and I have found if cut at that time the sap flows freely till they are exhausted, and no more grow.

In 1771, I came to Stockbridge, (a feeble stripling,) on account of my health; and Dr. Sargent, my friend, had in his twelve acre horse-pasture five acres of alders, so thick it was difficult to find even a horse among them; and since, I have owned four lots with alders in them, and all were years ago destroyed by one cutting at the aforesaid time. So long ago as when we had but one newspaper in Berkshire, I advertised that if people would cut off their alders on a certain day, I assured their destruction. Some considered it a trick, and even called me an impostor. Some, however, knew me, and the result was that plenty of alders were cut with the desired effect.

Yours, &c., O. P.

P. S. It is lamentable that there is no more attention paid to cutting timber and fencing-stuff. It is but a little more work to make a fence of wood that will last fifty or sixty years, than one that will rot down in twelve or fifteen years. I may, perhaps, prescribe.

Stockbridge, Mass., June, 1845.

SELF-ACTING PUMP.

LUTHER TUCKER, ESQ.—It is with much pleasure that I comply with the request of a gentleman connected with your journal, (Mr. Howard) in furnishing a few statements with regard to a new self-acting pump which I have lately set in operation, and which, I think, promises to be of some value to the public; and to no portion of it more so than to agriculturists. Notwithstanding the multitude of ingenious contrivances which have hitherto been devised for obtaining water for economical and ornamental purposes, the most valuable is the old and simple plan of bringing it from some neighboring spring or water-course which flows upon a higher level than that on which the supply is needed. This method, although frequently attended with considerable expense, is almost universally adopted where it is practicable, in preference to the best constructed pumps for raising water from a lower level to a higher. The situations, however, where this plan can be adopted are not numerous, except in mountainous regions. Buildings occupied as dwellings, or otherwise, except in such places, are generally located on high ground, where water cannot be procured by an aqueduct or conduit pipe. In such places it is universally obtained from wells situated on such high ground, and in innumerable instances in the immediate vicinity of ravines and small valleys deeper than those wells. In such cases it is obvious that a syphon might be led from the bottom of a well over into the low ground, the current through which syphon would afford a mechanical power, which, if it could be economically applied, would be sufficient to raise a steady and perpetual supply of water upon the elevated level where it was wanted.

These considerations induced me some months since to consider whether a syphon might not be so constructed as to discharge water at the summit of its curve, that is, at the highest point in the pipe of which it should be constructed. The idea at first appeared somewhat absurd, as those who are acquainted with the operation of the common syphon may suppose, inasmuch as in no point of a syphon is there so strong a resistance to any force tending to divert a portion of the enclosed fluid from the pipe than at the summit of the curve. The problem, however, is solved, and the contrivance which has accomplished the solution has been tested, and proved perfectly successful. The preponderance of the column of water in the longer leg of a syphon, which I have recently laid from a well fourteen feet deep, over into a neighboring ravine twenty-two feet deep, furnishes a sufficient mechanical power to deliver about one-third of all the water which enters the pipe at the bottom of the well, at the summit of the curve, two feet above the mouth of the well. The length of the pipe which goes down into the ravine is about ten rods, more than half of which distance it is laid in ground nearly level. The shorter leg of the syphon descends perpendicularly into the well, and is constructed of lead pipe of an inch calibre. At the summit of this pipe, and connected also with the pipe which passes down the hill-side, is the apparatus for discharging the water, of such dimensions that it might be enclosed in a cubical box ten inches square. I have omitted to mention that the pipe which passes into the ravine is about three-fourths the calibre of that which descends into the well.

The amount of water discharged by the apparatus, two feet above the level of the ground at the mouth of the well, through a half-inch pipe with a free aperture, is little more than a gallon per minute. If the pipe is laid upon the ground, and its adjutage contracted by a jet tube with an aperture of one-eighth of inch in diameter, the jet rises seven feet and a half above the mouth of the well; with another jet tube of one-sixteenth of an inch in diameter, it rises thirteen feet; and with another of one-twentieth of an inch diameter of adjutage, between eighteen and nineteen feet. Indeed there is no definite limit to the altitude to which water might be raised by this method, if the size of the syphon be increased, and a sufficient supply of water obtained for working it.

It may appear incredible that a syphon can be so con

structed that no definite amount of pressure shall be sufficient to restrain the escape of a portion of water from an opening in the summit of the curve, while in the ordinary syphon, a very small aperture at that point, communicating with the open air, destroys its action instantly; yet this apparatus demonstrates that it can be accomplished, by an extremely simple and compact contrivance, and on any scale that may be required, from a miniature model that will discharge its gill per minute, to an engine that will elevate a hogshead of water in the same space of time.

The apparatus is, moreover, so extremely durable, and so constant and certain in its operation, that it furnishes all the advantages of an aqueduct which brings water from an elevated level. The invention is capable of application to any good well or water course, which admits of the operation of a syphon, even though such well or water course should be a hundred rods, or more, distant from the lower level which should furnish the working power.

When applied to wells, I think it cannot fail to improve the quality of the water, as it is constantly changed and kept in motion.

Such an invention, if successful, places at the disposal of thousands of farmers, manufacturers, and gentlemen who appreciate matters of taste and luxury as highly as those of mere utility, a supply of water for use or for ornament, which it would be impossible for them to obtain in a more simple, cheap, or economical manner.

When my arrangements are completed for offering my invention to the public, I shall be happy, with your permission, to avail myself of your valuable journal, for the publication of a more minute description of this syphon, accompanied, perhaps, with a drawing. In the meantime, I shall take pleasure in showing the practical operation of the one which I have already constructed, to any of your numerous subscribers who may be sufficiently interested in the foregoing statements to call and see it.

I am, sir, most respectfully yours,

ERASTUS W. ELLSWORTH.

East Windsor Hill, Conn., July 18th, 1845.

DR. LEE'S ADDRESS IN CORTLAND.

ED. CULTIVATOR—Pursuant to notice, Doct. DANIEL LEE, the lecturer of the State Ag. Society delivered an address to the farmers of this county, in the Court house, on the 19th inst.

Rufus Boies, Esq., of Cortlandville, Pres't. of the County Ag. Society, presided, aided by the following Ex-Pres'ts of the Society—Jesse Ives, Esq., Doct. John Miller, Jedediah Barber, Esq., and William Randall, Esq. [Only two of the Vice Prest's were absent; Judge Berry, who has removed to Wisconsin, and Dan Hibbard, Esq., who was confined at home by illness.] George Chamberlain, Esq., Sec'y of the Society, acted as Secretary.

The audience, all circumstances considered, was large, and it was a capital representation of the enterprize and intelligence of our county. The address occupied probably an hour and a half, and was listened to, evidently, with profound interest and attention. I speak advisedly when I say it gave high satisfaction to *all* present.

At the close of the address, on motion of P. Barber, Esq., of Homer, it was unanimously

Resolved, That the thanks of the farmers of Cortland county be tendered to Doct. Lee, for his able, interesting, and highly instructive address.

On motion of H. S. Randall, of Cortlandville, it was unanimously

Resolved, That we highly approve of the course of the N. Y. State Ag. Society, in employing a lecturer to arouse the attention of the farmers of this state to the subject of agricultural improvement, and to communicate to them the recent important discoveries which have been made in their art, by means of Agricultural chemistry.

Doct. John Miller, of Truxton, rose and addressed the meeting for a few minutes with characteristic energy of thought and expression—congratulated the farmers of this state on the important auxiliary influence which *science* was bringing to bear on the mere physical and mechanical manipulations of husbandry, and expressed the opinion that the time had come when the state should do something to cause the rising generation of farmers to be instructed in the *science* of their art. He could not say the time had yet come when agriculture could be taught profitably in our common schools. He feared not. But it could be taught in a State Ag. School to young men, who could ultimately teach it in the common schools and elsewhere. He was in favor of such an institution, and thought it should be endowed by the state.

Mr. Randall remarked that the society of this county had already taken action on these subjects. They had unanimously voted that a State Ag. School with a pattern farm, ought to be established by the state—that agricultural books should be introduced into the common school libraries, but they had also voted that the time had not yet come to introduce agriculture as a study into the common schools. As many were present who were not members of the society, he would be glad of an expression on the first named topic from this meeting.

Mr. P. Barber, argued that we should not only pass such a resolution, but that we should take care to elect members to the legislature who would carry out our views.

Rufus Boies, Esq., the President of the Society, in a few impressive remarks, concurred in the opinions of previous speakers on this subject.

At the instance of Dr. Miller, the following resolution was drawn up, and it passed unanimously:

Resolved, That the interests of the Agricultural population of this state demand the establishment of a State Agricultural School with a pattern farm, and that our next members of the legislature be requested to urge the passage of such a law.

The meeting then adjourned. R.

MANAGEMENT OF POULTRY.

MR. TUCKER—In the present July number of your Cultivator is an article headed "Fowls in yards," stating that hens kept in small yards often acquire the *habit* of plucking out each other's feathers, till the victims are stripped sometimes almost naked—in some cases even their crops and entrails torn out, &c., &c. The article closes with the following question. "Can any one explain the cause of this morbid appetite, or tell us the best way of keeping fowls in a yard?"

I have had but little experience in keeping fowls, but am in possession of some facts, which may perhaps furnish an answer to the first part of the question; the latter part of it is pretty fully answered by yourself in the article in question. I would remark, however, that hens require a plentiful supply of fresh water; they also need shade.

A yard with a spring in it is a desideratum. Willows may be planted about the water, affording the desirable retreat; and the moist ground will retain the grasses permanently; whereas, in a dry yard, unless it be quite large, the ground will be bare as a roadway from the constant tramping and scratching.

The facts alluded to are as follows. A friend of mine engaged in the poultry trade, and at the commencement of operations, he had several hundred fowls confined in a small yard. They did very well for a period, having been regularly fed and watered; but after some weeks confinement, the habit of plucking feathers manifested itself, and his hens appeared to be losing their good condition. One morning he discovered that one of his fowls had been nearly devoured, the skeleton and some fragments remaining. He supposed some animal had gained access to the yard, set about finding the evidences of the supposed visitor, but without success. At noon of the same day, on looking into the yard, he saw another of the fowls just run down, and a group of hens around it devouring it most voraciously. The next morning another victim suffered in the same way.

He took the hint by this time, and without delay procured and kept them supplied with fresh beef, mutton, &c., and he lost no more fowls in that way.

It is well known also with what avidity hens that are confined in yards will seize and devour insects, worms,

mice, &c. These facts would seem to indicate that hens are not Grahamites—that the appetite alluded to is not a morbid one, but a constitutional necessity for animal food, and that if it cannot otherwise be obtained, they prey upon each other. Yours truly, C. S.

N. Am. Phalanx, N. J., July 12, 1845.

MR. ALLEN'S HERD-BOOK.

(CIRCULAR.)

SIR—About a year ago, at the solicitation of a number of gentlemen interested in the breeding of short horn cattle, I published a notice in several of the agricultural papers of the United States, that I would get up an American Herd-Book, provided my efforts should be seconded by a respectable portion of those engaged in that pursuit. Although slow in their responses, a considerable number of breeders have forwarded the pedigrees of their herds for insertion according to the terms of my proposal. Many, however, and among them some of the early and distinguished promoters of this branch of agricultural improvement, remain unmindful of this opportunity of thus recording their valuable stock.

A sufficient number of individuals having already contributed the pedigrees of their cattle to insure its publication, the work will proceed as soon as circumstances will permit, which will be *within three months* from this time.

I presume no arguments will be necessary with any systematic short horn breeder to convince him of the necessity and convenience of an American registry of his cattle, other than such as will suggest themselves to his own mind, and those already advanced in my two several notices to breeders already published.

In case you think proper to register your cattle in the proposed work, you will please transmit your catalogue of thorough bred animals (none other being admitted) with as little delay as possible, to me (post paid) at this place, with the registry fees accompanying them, and stating also the number of copies of the work you wish for, when published.

I will here remark, that the month of October next *will be the latest period* at which pedigrees can be received, as the work will be put in press immediately after.

The terms for registry are as follows:

For a single animal, one dollar.

For any greater number, not exceeding ten, 50 cents each.

For a number exceeding ten, 40 cents each.

The work itself not to exceed three dollars a copy.

If any gentleman of your neighborhood or acquaintance be a breeder of short horns, and not in receipt of this notice, you will confer a mutual favor by giving him the above information.

LEWIS F. ALLEN.

Black Rock, N. Y. July, 1845.

CULTURE OF THE GRAPE.

MR. EDITOR—My plan of a vineyard, after the vines are scaffolded, is, in brief, to have no impediment to a free passage of men, cart, or team, beneath the scaffolding; nor nothing seen for several feet high but main stem of vines and posts; and swine always kept in the vineyard to help to keep the ground clear of grass and weeds. When necessary, I use the harrow, skimmer, plow, or cultivator. And especially before an expected frost or severe weather to cause the leaves to fall, I scarify the ground; and again after they fall, I run over the surface with some instrument to incorporate the leaves with the soil to prevent their blowing away, and to answer in lieu of manuring. Trimming in the summer and early in the fall is good for all vines, (so far as trimming is necessary,) but especially so for the Scuppernong. No danger of bleeding at these times; and these last named vines especially should have plenty of room to expand—say thirty feet apart;—not too great a distance when considered that ere long, with good attention, they will form a thick, complete canopy, at that or even greater distance. Other vines ten feet each way is the common distance. Ten feet also the common distance for all my my posts to support the scaffolding.

In haste, yours, &c. SIDNEY WELLER.

Brinkleyville, N. C., June 6, 1845.

REMEDY FOR A LIGHT CROP.

MR. TUCKER—As there is a general complaint that the grass crop will be a short one, I would advise farmers, when they mow away their wheat in the barn or stack, to spread over every course of sheaves three or four handsful of salt. The straw will always heat enough to absorb the salt, and wheat may be mowed damper with the salt than without it. The straw, when thrashed, if not returned into the barn, should be well stacked; and if a large stack and well settled, will need no fence round it. Cattle, horses and sheep will help themselves, and the farmer will need no straw cutter, and will soon find his straw made into manure, better than by any patent right yet invented. Last winter I fed my colts, cows and sheep hay but once a day till the first of February, with straw that had been salted in the above manner, and they kept as well as when they had hay all the time. Some of my neighbors fed no hay to their young cattle while their straw lasted. In western New-York vast mounds of straw are left in the field from the time of thrashing till the ground is wanted to be plowed, when they are removed by fire; and numbers burn their straw as soon as thrashed, to destroy the pigeon-weed or red-root; but as the seed of this weed ripens long before harvest and drops off, nothing is gained by burning the straw. R. JOHNSON.

East Groveland, Livingston County, July 11, 1845.

THE POTATOE ROT.

MR. EDITOR—In almost every number of your Cultivator, I find something in relation to the rot in the potatoe, both as regards the cause and the mode of prevention.

This, with us, is a disease of comparatively rare occurrence; and may, I think, be justly attributed to our peculiar method of cultivation; and, indeed, so far as I can understand where this plan has been adopted, no case of the disease has ever made its appearance.

In the selection of our land we prefer a light sandy soil, without *great* regard to *the richness* of quality; this having been well pulverized, is drilled to the depth of from five to six inches and from $1\frac{1}{2}$ to 2 feet apart; at the bottom of these furrows and at the distance of eight inches are laid the potatoes, which we prefer being cut with from two to three eyes to a piece; the drills are then filled nearly to the top with the best well littered stable manure; a small portion of dirt is thrown on this so as to level the whole. The entire surface of the ground is then covered with leaves, (*we* prefer *pine* straw,) to the depth of from three to six inches.

It is to the adoption of this last method I particularly allude. The advantages of the straw are obvious; by its use is produced a more uniform moisture, as well as temperature of soil, which is kept perfectly free from grass and weeds, although no farther attention is required either from the plow or hoe, until the maturity of the potatoe; which for their size and number I have never seen surpassed, or equalled by any other method. This plan, with us, although not universal, is becoming much more general and will, I think, in a short time supercede that of any other. THOMAS C. HINES.

Nansemond, Va., July 12th, 1845.

SOAKING SEEDS.

There is an exception to the oft repeated directions to soak seeds before planting. It is *when the ground is so dry as to attract the moisture from the seed.* Then it delays rather than hastens the vegetation, if indeed it does not kill the seed. In all other cases, it is of great benefit to steep, and even scald, the seeds. I have tried all methods for some time, from soaking one hour to sprouting the various seeds, and the above is the result. During the severe drouth this spring, steeped seeds have generally died in the ground, and those only have vegeta ted that were planted dry. H.

THE CULTIVATOR.

ALBANY, AUGUST, 1845.

TO CORRESPONDENTS.

COMMUNICATIONS have been received, since our last, from S. Tillotson, N. B. Cloud, Wm. Bacon, J. Townsend, C. N. Bement, H., David Thomas, H. W. S. C., D. G. Mitchell, S. N. Holmes, E. Hammond, R. Burritt, S. M. Ackerly, Agricola, A. R. D., R. Johnson, Utica, N. Reed, C. S., S. B. Buckley, W. Cushman, S. Robinson, Dr. Lee, Alex. M'Donald, J. C. Mather, T. C. Hines, C. H. R., J. W. G., G. A. Fiske, E. W. Ellsworth, V. Juvenis, A. Eastwood, R.

Our thanks are due to Mr. DOWNING, for a copy of his "Fruits and Fruit Trees of America"—To LEA & BLANCHARD, the publishers, Philadelphia, for the 5th and last vol. of the "United States Exploring Expedition"—To GREELEY & M'ELRATH, for the continuation of Lardner's Lectures on Science and Art—To A. G SUMMER, Esq., Columbia, S. C., for copies of Gov. Hammond's Letters on Slavery—to some unknown friend, for Judge Rost's Oration before the Agricultural and Mechanic's Association of Louisiana.

☞ We have copious notes of CONNECTICUT FARMING, &c., but a pressure of other matters oblige us to defer them for future numbers.

TRANSMUTATION CONTROVERSY.—We have received from Mr. TOWNSEND, Zanesville, Ohio, a reply to the remarks of "L. F. A.," in our June nnmber. We can hardly think it expedient to extend this controversy, and we hope Mr. Townsend will excuse our declining to publish his letter. The arguments he advances against transmutation are, in our view, correct, and they agree with the opinions we have already expressed. Mr. T. offers to pay all the expenses of an investigation which shall prove *positively* "that a single grain of wheat ever did, ever will, or ever can, turn into chess." Therefore, until some new evidence can be brought forward in favor of transmutation, we can see no necessity of further agitating the subject.

MONTHLY NOTICES.

GOOD COWS.—Mr. Wm. CUSHMAN, of New Braintree, Mass., has a cow one-fourth Durham, which, he states, gave for ten days in June, from 54 to 63 pounds of milk per day—also a full blood Durham heifer which gave for the same time, 41 to 63 pounds per day. Those in want of Mackay pigs, South Down sheep, or a Durham bull, may be accommodated by applying to Mr. Cush-

CORN AND COB CUTTER.—While at Rochester recently, we had an opportunity of witnessing the operation of a new machine for grinding corn on the cob, invented by Mr. PITTS, which appeared admirably adapted for the purpose. Mr. P. has been at work for some years upon it, and thinks he has now succeeded in perfecting a machine which will fully answer the requirements of the farming interest. It is very simple in its operation, permanent in its form, and not liable to get out of order. The teeth are so arranged as to be easily taken out and sharpened, when necessary. It may be worked with a one horse power.

FINE MERINO WOOL.—We have received specimens of the fleeces of Mr. L. A. Morrell's Merinos, purchased of Jacob N. Blakeslee, of Watertown, and of Stephen Atwood Woodberry, Conn., and to which were awarded the first and second premiums at the last State Agricultural Fair held at Poughkeepsie, on sheep exhibited from without the State. One of these samples equals in fineness the best Merino wool we have ever seen, and the other is a very beautiful sample. Mr. Morrell informs us that these bucks were fed a little grain about a fortnight before they were placed with his ewes; after which none was given them. Their fleeces fully equalled his expectations as regards weight. Mr. Morrell's flock of high grade Saxons averaged last year a fraction over three pounds per head, and he appears sanguine that, by proper selections, he can bring it up to nearly four pounds, by means of his Merinos, and yet depart but little, if any, from the present quality of his wool. If he succeeds, his flock will be extremely valuable, and of course, equally profitable. We invite our friends to call and see these samples.

SYPHON PUMP.—We invite particular attention to the communication of Mr. ELLSWORTH on this subject, on another page of this number. We have lately had an opportunity of witnessing the operation of the apparatus mentioned, and can assure our readers of the entire correctness of Mr. E.'s description. The application of power in this case we believe to be altogether new, and in our opinion is highly creditable to the ingenuity and scientific knowledge of Mr. Ellsworth. We see no obstacle in the way of this invention becoming useful to a great extent.

FARM FOR SALE AT AUBURN.—We had the pleasure of walking over the farm advertised by Mr. REMER, at Auburn, a short time since, and can heartily recommend it to any one wishing for a country residence in the immediate vicinity of one of our pleasantest inland villages.

FINE WOOL IN MICHIGAN.—"C. H. R.," Aurora, N. Y., informs us that several flocks of selected fine wooled sheep have been of late driven from this, and the states of Vermont and Connecticut, into Michigan. That Messrs. Daniel A. Mills and George Barker, of Manchester, Washtenaw county, Mich., have lately selected a very fine flock of about 700 ewes and 50 stock bucks, from the flocks of Mr. Scovill, Ct., Mr. Church, of Vernon, Oneida county, and Mr. Richmond, of Aurora, Cayuga county, N. Y. "C. H. R." thinks these sheep may be relied on as of pure Saxon blood, and as producing the finest quality of wool. He states that "over two hundred young ewes, and thirty stock bucks" of the 700 above mentioned, were taken from the flock of Mr. Richmond, which flock was "chiefly derived from the importations of Mr. Grove and have been kept with great care pure as when imported." "C. H. R." also thinks that Michigan is well calcutated for the production of "fine wool," and that great inducements are offered the farmers there for engaging in this branch of husbandry; he is therefore desirous of informing them that "an opportunity is now presented in this flock of Mills and Barker, by which they can obtain those that are recommended as pure."

☞ We are indebted to ALEXANDER WALSH, Esq., for specimens of the following plants:—Teazel; Madder; (manufactured;) Siberian crab-pplea: Staphylea trifolia, (three leaved Bladder-nut;) White Dwarf Horse-chestnut; Pink do.; Gymnocladus canadensis; Upright Honey-suckle; White, Yellow, and Green Mint; Senna; Sea Kale; a specimen of silk reeled in 1827.

AMERICAN QUARTERLY JOURNAL OF AGRICULTURE AND SCIENCE.—The third number of this publication is before us. It contains various interesting articles, among which are—Agricultural Geology—Relations of Vegetables and Animals—Drifts and Changes in the Position of Soils—Manures—their action—How Plants absorb Carbonic Acid—Agricultural Science—Husbandry in Central New-York—Practical Directions for the Flower Garden—Animals useful to the Farmer, &c. Edited by Prof. E. EMMONS and Dr. J. A. PRIME, Albany. Terms, three dollars a year, in advance.

LARDNER'S POPULAR LECTURES ON SCIENCE, part VI., is received. Its contents are a continuation of remarks on Radiation of Heat—Meteoric stones, and Shooting stars—the Earth—Lunar Influences—Physical Constitution of Comets. Each succeeding part of these highly instructive and interesting lectures, seems more and more valuable. Price only 25 cents per number. Greeley and McElrath, New-York.

"CATALOGUE OF CAMELLIA JAPONICAS, green house and stove plants, etc., cultivated at the exotic nursery and horticultural gardens of VALK & Co., Flushing, Long Island." A handsome pamphlet of 92 pages octavo, with valuable directions for cultivating plants in houses and the open air.

OUR PLATE—MR. DONALDSON'S FARM.

We have the satisfaction of herewith presenting our readers with a fine steel engraving of the Durham bull "Prince Albert," bred by Mr. Whitaker, of Burley, Yorkshire, England, imported and now owned by ROBERT DONALDSON, Esq., Blithewood, Dutchess county, N. York. In the estimation of good judges, few, if any of the fine bulls which have been either imported or bred in this country, can be considered as surpassing, or even equalling this. He is a bull of great substance, with remarkable symmetry and fineness of bone. The portrait fails to do him full justice in one or two particulars. The head, from the eyes downward, is not sufficiently fine, and does not show the characteristic lineaments of the animal; and there is hardly sufficient breadth and expansion shown to the chest and brisket. In other respects the delineation may be pronounced good.

Mr. Donaldson imported this bull about three years since. His principal object is to rear good milch cows. For this purpose he selected the best common cows to be had, and by crossing with this bull has obtained a small herd of young half-blood Durhams. The oldest stock he has of the cross, are two-year-olds. There are several heifers of fine promise as milkers, and they exhibit a great improvement in symmetry over their dams.

Many will doubtless recollect a native cow of Mr. Donaldson's, called "Kaatskill," which received the first premium in her class at the last show of the N. Y. State Ag. Society. She is a remarkable animal; but we shall not now speak particularly of this cow, as we have an excellent plate of her, done in the same style as that of Prince Albert, which we shall give, together with an account of her productions, in a future number. Mr. D. has also a very superior Ayrshire cow, six years old, which has an excellent heifer calf by this bull. We think well-bred Ayrshires even or a cross between them and the Durhams, would prove highly useful on this farm—an opinion which is certainly supported by the appearance of this Ayrshire cow and her calf.

Few places that we have ever seen exhibit such marked evidence of refined taste, and correct appreciations of rural beauty, as BLITHEWOOD. The spot itself is one possessing great natural attractions, and these have been heightened and improved to the greatest possible advantage. It is a promontory on the east bank of the Hudson, embracing the greatest variety of magnificent landscape scenery of any spot of the same extent within our knowledge. The river is here of unusual width, and there are several pretty islands nearly opposite, by which the force of the current is so broken that the water has the placid quietness of a sheltered lake, and reflects with mirror-like vividness, every object on its banks, or floating on its surface. On the west side of the river, a little to the north-west, the Kaatskill group of mountains appear in all their majestic beauty, forming a grand, but varied and picturesque outline to the view for a considerable extent in that direction.

The mansion of Mr. Donaldson, constitutes the frontispiece to Mr. Downing's elegant work on Landscape Gardening and Rural Architecture. Representations of several of the other buildings, as well as various sketches of the scenery at Blithewood are also given in Mr. Downing's work, to which we would refer for a more particular description. The scenery in the background of our engraving, is copied from nature—the building on the right being the gate-lodge, and the one on the left the gardener's cottage—the farm-yard buildings with a grove in the rear, showing between.

The credit of introducing to this country the Rural Gothic, or pointed style of architecture, belongs to Mr. Donaldson. The first specimen of this style was the gardener's cottage above-mentioned, which, for its taste and simplicity, excels anything of the kind we have ever seen.* Mr. Donaldson was also, we believe, the first to introduce what is called the Bracketted style, several pretty specimens of which are shown among his numerous buildings.

Mr. D.'s garden has been but lately laid out—the present being the first season that the principal portion of it has been appropriated to plants. To secure a favorable site, he has been under the necessity of terracing the eastern declivity of a hill, and forming a soil somewhat artificially. The terraces are formed in a beautiful manner, supported by the most substantial stone walls. An extensive conservatory and grape-house has just been erected, in the most tasteful style. A rich profusion of flowers and shrubbery adorn the garden, and various labyrinthine walks and shady bowers.

The soil of Mr. Donaldson's farm has been much improved, and its productiveness vastly increased, since he came into possession of it, about nine years ago. His outside fences are mostly stone walls, laid in the most systematic and durable manner. His wet grounds, of which there is a considerable portion, have been mostly under-drained, and latterly he has commenced subsoiling, which promises to be of great benefit, particularly to the tenacious soil. A piece of oats on some of the under-drained land, is about the best we have seen this season. His barn is constructed on a convenient plan; his barn-yard is well protected by sheds, and is well contrived for making and saving manure. His young cattle are not pastured but soiled. They are fed in the sheds and yard, mostly with mowed grass, and are allowed the run of a small shady lot. They are in good order, and appear healthy and thrifty.

We saw here a superior machine for cleaning walks, invented by Mr. Donaldson. Its general form, is that of the frame of a wheel-barrow. Two bars of iron, representing the legs, reach down to the ground, and attached to the bottom of them is a transverse bar of steel, about two and a half inches wide, one edge of which is made sharp. Three or four inches of the lower end of the upright bars are also made sharp, in order to cut the sides of the walk. The handles are held by a man, and the machine is drawn by a horse. A space three-and-a-half feet wide is shaved at once, the man at the handles regulating the working of the implement so as effectually to cut up the weeds and grass. It is to be recommended for its simplicity and efficiency.*

* For a larger cut of this cottage, see the review of Mr. Downing's work in the Cultivator for March last.

* For a correct drawing of this machine, see Appendix to Downing's Landscape Gradening and Rural Architecture

NEW-YORK STATE AGRICULTURAL FAIR.

At a meeting of the Executive Committee of the State Agricultural Society was held at Bagg's Hotel, Utica, on the 10th July—present:

B. P. JOHNSON, President.

H. W. DOOLITTLE, Herkimer; E. P. PRENTICE, Albany; H. S. RANDALL, Cortland, Vice Presidents. L. TUCKER, Rec. Secretary, D. LEE, Cor. Secretary. GEORGE VAIL, Troy; T. S. FAXTON, Utica; Maj. KIRBY, Brownville; J. M. SHERWOOD, Auburn; GEORGE GEDDES, Onondaga, Managers.

The President of the Oneida County Agricultural Society, E. Comstock, and a number of the officers and members of that Society were present at the meeting.

Letters were read from Hon. HENRY CLAY, of Kentucky; Gov. LINCOLN, of Massachusetts; and Messrs. ALEX. WALSH, of Lansingburgh; THOS. HILLHOUSE, Albany; F. KNIGHT, Publisher of Washington's Letters on Agriculture; and A. L. FISH, of Herkimer.

The following gentlemen were appointed a Committee of Arrangements for the Fair:

B. P. JOHNSON, Rome; ALEX. WALSH, Lansingburgh; J. M. SHERWOOD, Auburn; GEORGE GEDDES, Tyler, Onondaga co.; LUTHER TUCKER, Albany; E. COMSTOCK, Rome; T. S. FAXTON, Utica; SPENCER KELLOGG, Utica.

The following gentlemen were appointed a Committee to confer with the railroad and boat companies, in relation to the transportation of stock and articles designed for exhibition:

J. M. SHERWOOD, Auburn; HORATIO SEYMOUR, Utica; M. D. BURNET, Syracuse; L. B. LANGWORTHY, Rochester; LEWIS F. ALLEN, Buffalo; GEORGE VAIL, Troy; THOS. HILLHOUSE, Albany.

The following gentlemen were appointed a Committee on Finance:

The PRESIDENT, Messrs. J. S. WADSWORTH, E. P. PRENTICE, THOS. HILLHOUSE, GEO. VAIL, L. TUCKER, and GEO. GEDDES.

The Judges for the Fair were appointed, and the list will be published as soon as it shall be ascertained from the gentlemen appointed that they will serve.

The following additional premiums are to be given:

For the best corn and cob crusher, to be operated by horse power, $10.

For the best grade yearling heifer, $5.
" 2d " " " Colman's Tour.
" 3d " " " vol Transactions.
" best heifer calf, Colman's Tour.
" " native yearling heifer, $5.
" 2d " " " Colman's Tour.
" 3d " " " vol Transactions.
" " native heifer calf, Colman's Tour.
" " samples, (not less than three cheeses from each of 10 dairies in any one county,) $20; 2d best $10, 3d best, $5.

Mr. GEDDES read a letter from Mr. F. COOPER, of Camillus, detailing a course of experiments on steeping seed corn, upon which a resolution was passed requesting Mr. Cooper to furnish the State Society with a report of his experiments when completed.

The Committee of Arrangements were directed to procure one large tent, and such number of small ones as they might deem advisable for the show grounds.

Dr. LEE, reported that he had been engaged between two and three weeks in delivering lectures in pursuance of his appointment by the Board, during which time he had visited the counties of Erie, Niagara, Monroe, Wyoming, Livingston and Oneida.

A Committee on behalf of the citizens of Utica, of which his Honor, E. A. WETMORE, Mayor of the city, was Chairman, waited upon the Executive Committee of the State Society. The several locations for the show grounds, which had been selected as proper places for the exhibition, were examined by the officers of the State Society, and they decided that the grounds on Mr. Thorn's farm, on the New Hartford Turnpike, was, upon the whole, best adapted for the exhibition of the Society, and the accommodation of the owners of stock who may attend.

The spirit manifested by the citizens of Utica, was most gratifying to the officers of the society, and gives assurance that every thing desirable to make the approaching Fair one of the most splendid exhibitions ever witnessed in this state, will be done so far as the citizens of Utica are concerned.

We will not for a moment doubt that the farmers of Oneida and of the adjoining counties, will present an exhibition of their stock, dairies and domestic manufactures, and worthy, not only of Central New-York, but of the Empire State.

The additional premiums offered for samples of the best 10 dairies in any one county, it is believed will secure an exhibition from the best dairy counties, more extensive than has ever before been seen at the Fairs of the Society.

Persons desirous of becoming members of the Society, and of competing for the premiums, are requested to enter their names at the stage office of J. Butterfield & Co., adjoining the National Hotel, Genesee st., Utica. The fees for membership are $1. Gentlemen may also become members on application to any of the officers of the Society.

NEW VARIETIES OF CORN.

Many of our readers may be familiar with the method which President Knight made use of to obtain new varieties of fruit by crossing previously existing sorts. The same means may be used to propagate new varieties of corn. Let the different kinds be planted in near proximity, as for instance in alternating rows, and they will intermix more or less freely. But this will be greatly facilitated by artificially removing parts of the flowers. It is well known that in order to render the ears fertile, that is, to cover the cob with grains, it is necessary that the pollen or fine dust from the staminate flowers which constitute *the tassels*, should impregnate the germ through the pistils or silk which covers the ears. To obtain a cross therefore, between two selected varieties, if we wish to transfer the grains of one to the cob of the other, let the latter be planted among the hills of the former, and then cut away the tassels, leaving the tassels or staminate flowers of the surrounding plants to impregnate the ears thus deprived of their own staminate flowers. Like most hybrids, the character of the new variety may not be developed until the second year.

Those who have different sorts favorably situated for such experiments, should be prepared to attend to them during the latter part of summer, taking care that impregnation has not already taken place before the staminate flowers are removed.

WESTERN NEW-YORK.

During the last month we had the pleasure of making a flying visit to several of our old friends in Western New-York. We were not a little gratified at the evidences we witnessed on every side, of the rapid progress which is making in rural improvement. These are to be seen in the increased attention paid to rural architecture—to the cultivation of fruits and gardens—to the cleaner and more thorough tillage of the farms—to the greater economy in the saving of manures, and in the general appearance of the farm buildings, fences, &c.

COL. SHERWOOD'S FARMING.

At Auburn, we spent a day with Col. J. M. SHERWOOD, who, three years since, purchased a farm of 300 acres, situated on the south side of Genesee-street, on the western border of this delightful village. This farm, though naturally of a good soil, had been so miserably managed by its former owner, who occupied it more than thirty years, that wheat could no longer be grown upon it, and other crops scarcely paid the expenses of cultivation—the fences and buildings worthless.

Col. Sherwood, having made his plans, located his buildings, fences, &c., proceeded, with the energy which so strongly marks his character, to the work of improvement, which, if we are not greatly mistaken, will soon make this worn-out farm one of the most beautiful and profitable in Western New-York. It lies in a compact body, with a slight ridge running nearly through the centre from north to south. A lane along this ridge divides the farm into two nearly equal parts—these parts are sub-divided into lots of about twenty acres each, with the exception of the two rear lots, which each consist of thirty acres. Having thus laid out his farm in the most convenient manner, every lot opening on to the lane, and enclosed it in the most substantial manner, with post and board fence, the next step was to prepare his fields for profitable tillage. Though draining had never been deemed necessary on this farm, he found more or less cold unproductive spots in almost every field, evidently caused by an excess of water. To remedy this evil, under drains were made, when a most thorough course of tillage was entered upon. The field was plowed as deep as it could be conveniently with the common plow, and this followed, so far as circumstances would admit, with the subsoil plow, loosening the soil six or eight inches deeper. Manures were then applied liberally, and the ground plowed and harrowed till thoroughly mellowed, and thus brought into the best possible condition for the reception of the seed. This course was pursued with each successive field brought under the plow, until he has now over 120 acres under cultivation, viz: 35 acres in wheat; 20 acres oats; 20 acres barley; 10 acres corn; potatoes and peas 5 acres each; 7 acres in carrots, ruta bagas and sugar beets, and 20 acres fallow for wheat. Better crops we no where saw than on this worn out farm. The wheat crop last year averaged over thirty bushels to the acre, and promises to at least equal that amount this year. The grass lands, which he has seeded, will produce from 2 to 2½ tons per acre.

The same judgment which has directed the labor bestowed on the farm, is manifest in the selection of the implements with which it is worked, and the animals with which it is stocked.

The implements were all of the *best* kinds. Among

those we noticed, were two of Ruggles, Nourse & Mason's Worcester, and two of Prouty & Co.'s Centre Draft Plows—the Worcester Subsoil plow—Bement's Cultivator, Langdon's Horse-hoe, and a new Cultivator, recently manufactured at Troy, with which he was much pleased.

His stock consists of about forty head of IMPROVED DURHAMS, selected from the best herds, and bred with great care, several of which have taken the highest prizes at the exhibitions of our State Agricultural Society, and others which, we venture to predict, will be found among the successful competitors at its next show. Of SHEEP, he has about 60 pure bred South Downs, whose fleeces averaged this year 3½ lbs., and about 100 Merinos, or grades of Saxons and Merinos, whose fleeces averaged 3 lbs. 14 oz. One of his stock bucks, procured of Mr. Blaksley of Connecticut last autumn, sheared 8½ lbs. of well washed and very superior wool, samples of which, and other fleeces from his flock, may be seen at our office. His SWINE, with the exception of a pair of Leicesters, consists of Berkshires, and in his POULTRY YARD, we found the Dorkings and Polands.

The buildings are in keeping with the other improvements. The barns and sheds surround the yard, and are admirably arranged and substantially built, with small lots on the west side reserved for single animals, calves—or for any purpose for which they may be wanted.

In building his residence, Col. S. adopted a plan admirably fitted for its purpose, both by its elegance and convenience of arrangement. It is a beautiful cottage in the pointed style, showing to great advantage from every point in which it is viewed. We shall not at present attempt a description of it, as we hope in some future number to present our readers with an engraved view of it, together with the plans of the floors, &c. This tasteful and commodious house, we venture to say cost less money than many of the less sightly but more pretending houses which are frequently seen in various parts of our country. Now that such works as Downing's Landscape Gardening and Cottage Architecture, are becoming more generally known, we shall doubtless soon see a decided improvement in our rural architecture—a consummation most devoutly to be desired.

We have seldom seen a farm more favorably situated for improvement, and as seldom have we seen one, in all respects, so thoroughly and judiciously managed. Col. S. has not been sparing of his outlay, though his expenditures have been directed with judgment and a strict regard to *profit*. It is obvious that in effecting so great an improvement in so short a time, a proportionate immediate income is not to be expected; but we feel perfectly satisfied that he will have no occasion to complain of the unproductiveness of his investment.

At Rochester, we saw a beautiful specimen of rural architecture in the Gothic cottage, just erected by T. H. HYATT, Esq., on his farm at Elmwood, a view and plans of which we have now in the hands of the engraver.

FINE SEEDLING STRAWBERRY.

While visiting our friend JOHN J. THOMAS, at Macedon, he proposed a visit to Palmyra, for the purpose of examining a bed of seedling Alpine Strawberries in the garden of Col. J. S. STODDARD of that place. Col. S. has directed much of his attention for several years past to the cultivation of the strawberry. Some years ago, he raised about 2000 new seedlings from the Alpine variety; one of which, a red variety, he selected and has since increased, which he regarded as the finest of the whole. The ground now occupied by this seedling is about 60 feet square, the plants standing in hills fourteen inches apart. We never witnessed so fine a display of fruit. The Alpine strawberries usually bear their fruit above the leaves; and in this case the masses of red berries presented so brilliant a glow as to be conspicuous at several rods distance. We measured some of the fruit of this variety which was one inch and a fifth long, and more than three quarters of an inch thick. Many specimens were about this size. The ground on which they grow is good garden soil, not rendered unusually rich by manure.

Col. Stoddard estimates that he will be able to pick from this plantation of sixty feet square, thirty-five bushels before the strawberry season is over. From this and another smaller bed he has taken two bushels of the finest fruit daily, and he thinks he will continue to gather that amount daily till the first of August, when he proposes to remove his plants for the purpose of increasing them. He sells them at $4,00 per bushel, or twelve and a half cents a quart, about one half the usual price of fruit of that quality in our cities. He suffers the fruit to remain on the stalk longer than usual, or until of a dark mahogany color. One person, with diligence, is able to pick two bushels in half a day.

This plantation was set out in the early part of last August, and now the plants completely cover the surface of the ground, which is kept clean and well cultivated.

Col. Stoddard showed us some young seedlings, obtained from seed planted last summer, and transplanted this spring. They were very small, the leaves being scarcely more than the quarter of an inch in diameter; and young experimenters would probably be discouraged at the outset, were they not to know the small size to be expected in young seedlings.

CROPS IN THE WESTERN PART OF THE STATE.

The wheat crop, although seriously affected by the cold weather of early spring, and the subsequent severe drouth, has lately improved to a remarkable degree, and a good crop is now promised. In the counties of Monroe, Wayne, and Ontario, the product will undoubtedly equal the average; and in other adjoining counties there is a very fair prospect. It not unfrequently happens that unfavorable weather in spring is followed by the reverse in early summer; and early predictions of the result have consequently often proved erroneous. A small portion of the present crop appears to be injured by the Hessian fly; and the worm in the grain has been discovered, but it is believed its ravages will not be extensive. No appearance of rust has yet presented.

The corn crop was kept back by the unusually cold weather late in spring and early in summer, and some early plantings were destroyed by the frost. Most fields, however, are now assuming a fine appearance, and with the usual warm weather which is to succeed, little fear need be entertained for a good return.

The exceptions to success in these two important crops are, as a matter of course, on such lands as have been hard run with tillage without manure. In such cases the corn presents a small and sickly appearance; and wheat is small and thin, and chess, grass, and other weeds have thus been permitted to have free growth and to obtain the ascendancy.

The hay crop is light; probably not more than two-thirds of the ususal product will be afforded. Those farmers who have made provision for crops of corn-stalk fodder by thick sowing, and for a full supply of roots, will probably escape the inconvenience, and in some cases the evident disaster which will result from a deficiency of food for cattle.

THE FRUIT CROP.

This year there is an extraordinary failure of fruit. The severe frosts of the latter part of spring, have cut off most of the crop in the central and western portions of the state. There will be a small crop of apples, perhaps not half the average, west of Cayuga; but from that county eastward, the crop appears to be nearly or entirely lost. The peach crop has been much thinned in the western counties; near the south shore of Lake Ontario, and in other favorable positions, there is however a fair promise. Cherries, strawberries, and even currants, have been also seriously injured, and the amount lessened. With the exception of a strip of land a few miles wide, bordering the south shore of Lake Erie, there appears to be a total loss throughout Ohio.

IMPROVING COARSE HAY.

It often happens that farmers have certain wet portions of their meadows occupied with coarse grass and weeds, which are cut after the rest of their hay is made and secured. It is of course only second or third rate in quality, and is intended for the hardiest class of cattle. I

can be rendered very palatable, however, by a free application of salt, in frequent and successive layers as it is deposited in the stack or mow; the amount of which may vary from a peck to a half bushel of salt to a ton of hay. Coarse hay, thus prepared, is frequently preferred by cattle to fine hay not so prepared.

All hay should receive an application of salt when stacked or stored away, as the salt not only preserves it from injury in keeping, but domestic animals, which are frequently much neglected in salting in winter, thus obtain a constant and regular supply, administered to them in the best possible form.

DEATH OF DR. AKERLY.

Soon after the publication of our last number, we received the painful intelligence of the death of Dr. SAMUEL AKERLY, well known through the medium of our columns for several years under the names of "*Richmond*," and "*A Practical Farmer*." He died at his residence on Staten Island, Sunday, July 6th. By this sad event we, in common with the readers of the Cultivator, have been deprived of a most valuable co-laborer in the field of agricultural improvement, and the community generally have suffered the loss of an estimable and highly useful citizen. Like his eminent brethren, Fessenden, Buel, and Gaylord, he was called away suddenly—having been in his accustomed state of health only twenty-four hours before his death. He was a learned and talented, as well as benevolent and philanthropic man; and his death will be sincerely lamented by numerous personal friends, and also by a wider circle to whom he had become known through the public press. We find in the New-York *Commercial Advertiser* a short notice of his life and labors, from which we give the following interesting extract:

"Doctor Akerly was born in this city, was a graduate of Columbia College, and having inherited from his father ample pecuniary means, he received the best medical education this country could furnish, under the superintendence of his distinguished brother-in-law, the late Doctor Samuel L. Mitchell. His habits of application and study, in the commencement of his professional life, brought on a disease which was the source of great annoyance through many years, and at length terminated his life at the age of sixty years. He has been a large contributor to medical and scientific journals—was for several years a member of the common council. During the late war between this country and Great Britain he was hospital surgeon—was mainly instrumental in getting up and sustaining, through the first years of its existence, the Institution for the Deaf and Dumb, and was the second president of that institution. He was, in like manner, instrumental in procuring the passage of the act of incorporation of the Institution for the Blind, of which he was the first president.

"A few years ago the state of his health compelled him to leave the city, and he established himself on a farm on the south side of Staten Island, where for several years, and to the day of his death, he devoted himself to agricultural pursuits with great ardor. He has given to the world during his retirement, through agricultural journals, many of the results of his observation and experience in his new pursuit.

"He has also been enabled, during that retirement, to prepare, or rather to complete, a full biography of his friend and relative, Doctor Mitchell. We have learned that the work was nearly ready for the press, and we presume that it will soon be published under the direction of his representatives."

PRESERVING EGGS.

Many receipts are given for preserving eggs, all strongly recommended, and many of them failing on trial. They may be successful in one case, but varying circumstances may cause a different result. For instance, lime water may be very successful when of the right degree of strength or causticity; but skill appears to be required in managing properly such preparations. Some have been very successful by packing them in salt, plaster of Paris, and other pulverulent substances, with different degrees of success. But the main point appears to be to pack them in some soft or powdery substances, with the *small end downwards*, in an exactly perpendicular position, and so embedded that they shall never touch each other. Provided these requisites are strictly attended to, it does not appear to be very important what they are packed in; we have been uniformly successful in the use of *salt*, never failing in keeping them for a year, and a neighbor in one case kept them three years in a perfectly sound state.

STATE OF THE CROPS.

We have received a letter from Col. A. MCDONALD, of Eufalla, Ala., dated Edgar county, Illinois, July 9. Mr. McD. is on a tour through the western states, and may, as he intimates, continue his journey to this state, and visit the show of our State Society, at Utica, where it will give us pleasure to meet him. He informs us that he left Eufalla on the 4th of June, that through all that portion of Alabama which he travelled, (a distance of 100 miles,) the crops were suffering much for want of rain. The corn crop in the richest sections, however, looked well. From all the information he could gather, the cotton crop would probably be a short one. In reference to Illinois and Indiana, he writes:—

"We have now travelled 130 miles in these states—the soil we find immensely rich—particularly in the valley of the Wabash. Here we travelled one hundred miles over the richest country in point of soil, I have ever seen. I thought by far a better farming country than middle Tennessee, that I examined last year; as the Wabash lands are not only rich but so level that we travelled sixty miles in this rich valley of lands, on almost a perfect level—passing over extensive prairies of the finest soil. On these extensive prairies we find large crops of wheat and corn. The report is that from forty to fifty bushels of corn to the acre is common, and that from twenty to thirty bushels of wheat per acre are here produced. I found the corn generally planted 4 feet each way, and 4 stalks in a hill. Owing to the immense quantity of rain that has fallen in the month of June, the wheat crop, it is thought, is somewhat injured. The corn crop is also injured in some places. It has been impossible to plow the fields here for the last three weeks."

We have also a letter from Dr. N. B. CLOUD, of Macon co., Ala., dated June 19th. He informs us that the cold continued very late—frost having occurred south of 33 degrees, on the 17th of May. The cotton plant suffered not only from the cold and drouth, but from *lice*—(aphides.)

"The cotton crop," he states, "is not so forward as the last, yet the warm weather having set in with the present month, and showery weather for the last 10 or 12 days, the crop improves astonishingly. The stalk is not as tall as usual at this period, yet it is well formed and exceedingly promising. I counted on the 15th, upward of 100 blooms and squares on one stalk.

"The corn crop never promised finer in this section—the spring has just suited it—the great body of the crop has been in silk and tassel since the 1st of June, and the later corn looks equally well. I have seen but little of the crop in the prairies, but what I have seen promises fair, both corn and cotton, and I have been informed that their prospects have seldom been finer.

"The oat crop is fully fine through this immediate neighborhood, and with our present prospects, after the drouth of spring, (which, upon the whole, is favorable,) the rains having set in, I think the crop will prove, at least, a fair one."

Our correspondent, SOLON ROBINSON, writes from Vincennes, Ia., July 6:

"Wheat was a pretty fine crop here, but there has been such a perfect deluge of rains that many fields are totally ruined in the shock; while in the northern part of the state we suffer with the drouth to that degree that wheat headed out not more than knee high in many places. The grain is good, but the quantity will not be large. Other crops are much injured there by drouth, while here, the drouth first injured crops, particularly

corn upon the clayey lands, and now it is completely drowned. Upon some of the Wabash sandy bottom lands, the corn is fine; I saw many fields as I came along, where it was higher than my head."

M. Davis, Jr., Esq., Lynchburgh, Va., under date of July 11, states that vegetation was there suffering from a drouth of long continuance. The tobacco and corn of last year, were on some plantations a good deal injured, and there has not, he says, been rain enough since. The winter was uncommonly mild—in February, the wheat fields and grass lands had the appearance they commonly have in May. Cold weather recurred in March, and frosts followed at different times up to 1st June, "the result of all which is," says Mr. D., "we have literally *no* fruit, many garden vegetables failed, no clover hay, grass meadows very light, many oat fields not worth cutting, the pastures dried up, and the corn suffering; though if we have rain soon, we may have a tolerable crop of the latter. The wheat crop forms our only bright spot."

A letter from South Carolina, of the date July 11, states that the corn-crop "through the whole upper part of the state, is cut off perhaps one-half, by the unprecedented drouth." Our correspondent adds, "while I write, however, we are having a refreshing shower, and I hope we may yet do better with our late corn than we anticipated. Our wheat has been very good."

L. P., of Pa., informs us that there was a frost on the sixth of May which totally destroyed much of the wheat in Chester, Lancaster, and large portions of Montgomery and Delaware counties. The prospect there for corn and potatoes was said to be good on the 7th July. Oats short and thin, estimated at about half a crop, owing to drouth.

In a tour through a portion of Connecticut and Massachusetts, last month, we found the hay crop much lighter than usual, owing to drouth. Rye, which is cultivated quite extensively, is middling. Wheat is not largely cultivated; but the few fields we met with were very good—the straw beautifully bright and the berry plump. This was particularly the case in the valley of Connecticut river, where wheat has latterly been considerably introduced—it following tobacco, (a staple crop there,) with good success. Apples and pears are not as promising as usual—cherries were plenty. Corn was rather backward, but the late extreme heat, where it has not suffered too much from drouth, has been favorable for it.

Hay Crop in Orange County.—A letter from Newburgh, dated July 2d, states that in consequence of the extraordinary drouth, and the total want of a heavy rain since April, that the hay crop will not average more than one-third, or according to the estimate of some, one quarter of the usual crop. Another correspondent from the interior of the county, considers the hay crop as insufficient to winter half the cattle of the farmers.

From various letters, we give the following summary:

Rochester, July 18.—Hay is not more than half a crop. Corn looks well, except where damaged by the wire worm, which in some cases has lessened the crop one third. Wheat never looked better—we saw in a three days tour, probably 20,000 acres, several fields of which will yield 40 bs. pr. acre. Potatoes and oats generally promising. T. H. Hyatt.

Canandaigua, July 18.—Wheat an average. Barley best ever known here. Hay on old meadows very light. Corn, potatoes, and oats pinched by drouth, but if rain comes soon, may be good crops. Weather hot—mercury 82 to 100 degrees. Oliver Phelps.

Elbridge, July 22.—Crops generally good, except hay—not much more than half a crop of that. Wheat good—barley and oats promising. S. M. Brown.

Syracuse, July 22.—Wheat is injured by rust, and in some cases will yield one half less than appearances four weeks since indicated. Barley and oats good. Corn backward. Grass light. Weather hot and dry till Sunday night, when we had two heavy showers.

E. Marks.

To Prevent Vermin on Poultry.—Scatter slacked lime on the perches and floors of the hen house, as often as once in ten days. It will effectually eradicate the lice and promote the health of the fowl. S. Barrows.

FOREIGN INTELLIGENCE.

By the Britannia we have our foreign exchanges to June 2. The prospect for crops in Great Britain was on the whole favorable. It was thought there would be a fair average yield of wheat. "Barley," it is said, "is in every point of view a promising crop, and where oats are grown they are also well spoken of; whilst beans and peas wear as healthy and vigorous an appearance in all parts of the kingdom as could possibly be desired. In addition to the generally auspicious promise of the grain crops, farmers have also reason to be well satisfied with their produce of hay." The weather during June was uncommonly warm.

Considerable sensation had been occasioned in consequence of sentiments expressed by Sir Robert Peel and Sir James Graham, favoring a total repeal of the corn laws. Of the policy of Sir Robert Peel, it is said—"his plan evidently is to make periodical changes, all in favor of the manufacturers and prejudicial to the farmers, and it is now abundantly evident that the occupiers of the soil have nothing to expect from the present ministry."

The wool trade was brisk, at fair prices, both in Great Britain and on the continent.

The *hop trade* was rather dull. It is observed—"The accounts from the plantations are exceedingly favorable on the average, and this checks business." Prices are given as from 7*l.* to 9*l.* per cwt.

Agricultural College at Cirencester.—This institution, it is expected, will go into operation in the course of the year. Prince Albert has become a Patron, and is also one of the governors of the college.

The Bakewell Long Horned Cattle.—A writer in the *Farmers' Journal* states, that in a late tour through the midland counties, he found to his great surprise, some extraordinary fine cattle of the once famous Bakewell or Dishley breed. Some of the best were at Mr. Twycross's, near Canby, the place where Mr. Bakewell obtained his two first celebrated breeding heifers. A fine herd of them are also spoken of as belonging to Hon. Mr. Nugent, of Hingham, Leicestershire. Six of these were to be exhibited at the great Shrewsbury show in July. The writer says—"My friend with me was struck with amazement to see long-horned cattle which had been said to be nearly extinct, so good and so heavy, with such fine, firm, thick flesh, good symmetry, strong constitutions, and at early maturity."

The Exhibition of Domestic Poultry, under the auspices of the Zoological Society, closed at Regent's Park on the 14th of June. The show appears not to have quite equalled anticipations. The first prize for Dorking fowls was awarded to Rev. G. C. Gillett. Prizes were also given for fowls of the Surrey, Old Sussex, Hamburgh, Black Spanish, Polish, Chinese, Malay, and several varieties of the Bantam breed. Also for ducks, geese, turkeys, pheasants, and pigeons. The black Spanish fowls are spoken of as of large size and very beautiful. The gold and silver spangled Bantams—a breed which originated with Sir John Sebright—are said to have formed decidedly the most beautiful part of the exhibition. The white Aylesburg ducks are said to have been very large.

Curing Bacon—$\frac{3}{4}$ lb. of bay salt, $\frac{1}{2}$ lb. of saltpetre, 1 lb. of coarse sugar, and about 1 lb. of common salt. This is sufficient for the bacon and faces of a hog of 10 or 11 score. Pickle all together, and let it remain in the pickle a month, turning and rubbing it all every day. The flavor of bacon depends quite as much upon its being properly smoked and kept after it is made, as it does upon the curing.

Chinese Grass.—During the past week, Messrs. Hargreave and Brothers, flax spinners and power-loom linen manufacturers, of this town, called at our office and exhibited a sample of Chinese grass. This article is represented as possessing all the qualities of flax, but in a higher degree than any other known to our spinners or manufacturers—surpassing the best qualities in strength, fineness, and length of staple. These gentlemen also showed us a sample of fine linen manufactured by them from this article, which greatly resembled French cam

bric, but with a more silky appearance. It would appear that the Chinese grass can be supplied in unlimited quantity, and if that should be the case it must be a subject for congratulation that an article of such large consumption in this country should be presenting itself as another exchangeable commodity for our manufacturers, the rapidly extending consumption of which throughout China seems to be limited only by the means which they possess of making a suitable return for them.—*Leeds Mercury.*

WINTER GRAIN—STEEPS FOR SEED.

We should be in favor of sowing rye as early in September as practicable; and where there is no danger to be feared from the fly, we would observe the same rule in regard to wheat. There is a particular reason for early sowing rye this season, and that is the advantage it will afford for feed to sheep and young stock. The dry weather has lessened the hay-crop to a great extent, and the supply of grass in pastures must in many cases be very small. Rye, if allowed to get good root, may be pastured with light stock in the fall, and to some extent during winter. In some cases it may even be expedient to feed in spring. The diminution which results to the yield of grain is not equivalent to the advantages as pasture. The crop starts very early, and is particularly adapted to the dry lands on which the grass has suffered most. Would it not be judicious to sow this crop largely, to be used this fall and next spring as a substitute for hay and grass? In passing through the country, we notice in the barn-yards, and around the barns, or sometimes by the road-side, considerable piles of manure, exposed to waste by evaporation and washing of rains. If some of the fields where the grass is dried up were plowed, and all the manure now lying useless, was carefully collected and applied to them, a large amount of feed might be produced, which would be available before much grass would be had next season.

In the preparation of ground for winter grain, either wheat or rye, we doubt the propriety of bringing to the surface, the sward, and vegetable matter which had been buried but a few weeks before; especially where the soil is sufficiently porous and loose. Some tool should be used which will sufficiently mellow the soil, without reversing the furrows. A cultivator, if rightly constructed, and worked at first mostly lengthwise of the furrows, is found to answer a good purpose.

The preparation of the seed is an important matter. The cleanest and heaviest should be sown. If it contain seeds of pernicious plants, they should be taken out. It will amply pay to pick over by hand a peck or half bushel of wheat, or other grain, to be sown on a spot of good clean ground, purposely for seed. Chess, oats, and other seeds, lighter than wheat kernels, may be principally taken out by putttng the grain in strong brine, a small quantity at a time, and stirring it with a stick. The foul seeds will rise, and may be skimmed off. When it has been finished, it may be put on a floor and dried off, or rendered fit for sowing, by mixing with it air slacked lime or plaster. Passing the grain slowly through a good winnowing mill, will clean it from nearly all the small seeds, such as wild pink, wild mustard, and seeds of most weeds, as well as the most shrivelled and imperfect kernels.

The various kinds of *smut* in grain have been well ascertained to be vegetable parasites of the fungi tribe. The species known as *Uredo fœtidæ*, commonly called "dust, or pepper brand," is the most injurious to wheat. Its seeds are so minute that they are believed to be taken in by the spungioles of the plant, and are with the sap carried up the pores into the cavity of the embryo kernel, where the fungus reproduces itself; causing an abortion of the grain, and giving in its place a black dust of most pungent and disagreeable odor and taste.

There is no longer any doubt that this substance may be eradicated from wheat by means of certain substances applied to the seed. So often has this been proved by actual experiment, that we "hold him no longer guiltless," who neglects the application of the remedy. The vegetative power of the fungus may be killed by lime, ashes, brine, solutions of arsenic, vitriol, &c. We have tried nearly all these substances, and give the preference to vitriol. Our mode of using it has been as follows: Dissolve in hot water two ounces of blue vitriol, (sulphate of copper,) for each bushel of wheat; add as much water as is necessary to cover the grain, stirring the solution well. Soak the wheat two or three hours, and dry it with plaster before sowing.

In regard to *fertilizing* steeps, we do not know that we can add anything to the suggestions given in our May No., page 158, to which we would refer those wishing to make experiments of this kind.

NEW PERIODICAL.

THE FARMER'S LIBRARY AND MONTHLY JOURNAL OF AGRICULTURE. Edited by JOHN S. SKINNER. Greeley and M'Elrath, publishers, Tribune Buildings, New-York—100 pages, monthly, at $5 per annum.

We hail with pleasure the re-appearance of Mr. SKINNER in the editorial chair, and congratulate him as well as the public upon the favorable circumstances under which he again makes his bow to the friends of Agriculture, with all the vigor and enthusiasm of youth. He is most fortunate in securing such men as Greeley & M'Elrath for his publishers, as their well known enterprize and industry afford abundant assurance that the work over which he presides, will be issued in the best style, and take its place among the permanent publications of the day—an assurance highly necessary to the success of a work of this character.

We are much pleased with the plan of THE FARMER'S LIBRARY. Each number consists of two parts, one of which is to be devoted to the re-publication of new and valuable works on Agriculture—the other to constitute the Journal of Agriculture. The first part of the present number is occupied with a re-publication of Petzholdt's "Lectures to Farmers on Agricultural Chemistry," a work issued the last year in London, and which has been highly commended by the foreign agricultural press, but which we have as yet had no opportunity of examining.

The Monthly Journal opens with an appropriate and interesting biographical notice of the late Hon. STEPHEN VAN RENSSELAER, of this city, whose labors in behalf of agriculture are well known, accompanied by a well executed portrait on steel. This department shows that our friend Skinner has lost none of his enthusiasm for the cause, or ability to manage a journal of this description. Sixteen chapters are devoted to the consideration of various subjects, such as Deep Plowing—The Value and Progress of Agricultural Science—Claims of Agriculture on the Business Community—Southern Agriculture, &c., together with several pages of miscellaneous matters. A lithographic print is given of three of Mr. Gratham's prize South Down wethers, and another of the Silk Plant (apparently a species of "milk-weed,") from Tripoli.

GRAPE-VINES ATTACKED BY ROSE-BUGS.

In our answer in the July No., to an inquiry on this subject, we stated that we had not before heard of this insect having attacked grape-vines. Our attention has been recalled to the subject by a letter from "H. W. S. C.," of Oatlands, near Burlington, N. J. He remarks that his vines suffered from this cause some years since, and refers to a remedy given by Dr. Underhill, in the Cultivator, vol. 9, page 199, which we had overlooked. The remedy recommended by Dr. U., was to go over the vines every morning, and brush the bugs into cups containing water. H. W. S. C. thinks he has "found out a readier way to kill them. He takes a lillte spirits of turpentine, instead of water, in the cup, which he says saves the necessity of treading on them, as it kills them instantly. "The next season," he observes, "after having practiced this mode, there were certainly not half as many insects as the first, and this year there has been comparatively none, and my vines are now loaded with fruit, with scarce a berry injured by the rose-bugs. The fact stated by Dr. Underhill, that the rose-bugs breed in the ground, is clearly demonstrated by the following fact: I was last summer preparing a heap of compost

near my grape vines, which in the fall was put into a green-house in which I was planting foreign grape vines. Early in May I was surprised to find rose-bugs on the young vines in the green-house. I immediately destroyed them, but they kept increasing for several days, though none were seen out of doors for full three weeks afterwards. The eggs, therefore, must have been laid in the compost heap the season before, and brought into the green-house with it, where the heat hatched them thus much sooner than their existence would have commenced in the open air."

THE CULTIVATOR ALMANAC FOR 1846.

This work, with Astronomical calculations for Boston, New-York, Baltimore, and Charleston, has just been issued. It is got up in a uniform style with the previous years, beautifully illustrated with a great variety of engravings, and contains much useful matter on gardening and farming, which we should be glad to see generally circulated throughout the country. Editions will be printed for Booksellers and Merchants, with the privilege of occupying the last page with advertisements, at $15.00 per 1000. Address the publisher of this paper.

☞ The Cultivator Almanac can now be obtained of M. H. Newman, 199 Broadway, and A. L. Halstead & Son, No. 7, Platt-street, New-York—Armstrong & Berry, booksellers, Baltimore—Wm. H. Moore & Co., booksellers, Cincinnati—D. Baker & Co., booksellers, 80 Camp-street, New-Orleans—Wm. Alling, bookseller, Rochester, and T. Morehead, Jr., Erie, Pa.

NARRATIVE OF THE UNITED STATES EXPLORING EXPEDITION.

All the volumes of this work, five in number, have been received. We have before spoken of the two first volumes—to the others we have not given the attention requisite to enable us to give a particular notice of their contents. The narrative appears to detail with all necessary minuteness every important incident, from the sailing of the squadron in 1838, to its arrival in New-York in 1842. In the fourth volume, which we have just been looking over, we find some interesting remarks relative to Oregon, a portion of which territory was examined by Captain Wilkes and some of his officers with considerable attention. A visit was made to Vancouver, a post on the Columbia river, occupied by a branch of the Hudson Bay Fur Company. Here considerable progress has been made in farming and in horticulture—a garden almost vieing with the Chiswick gardens of the Duke of Devonshire, belongs to the post, under the direction of Dr. McLaughlin. "The farm at Vancouver," says Captain Wilkes, "is about nine miles square. On this they have two dairies, and milk upwards of one hundred cows. There are also two other dairies, situated on Wapauta island, on the Williamette, where they have one hundred and fifty cows, whose milk is employed, under the direction of imported dairymen, in making butter and cheese for the Russian settlement. They have likewise a grist and saw-mill, both well constructed, about six miles above Vancouver, on the Columbia river."

"The stock on the Vancouver farm is about three thousand head of cattle, two thousand five hundred sheep, and about three hundred brood mares. At the dairy we were regaled with most excellent milk, and found the whole establishment well managed by a Canadian and his wife. They churn in barrel churns, of which there are several. All the cattle look extremely well, and are rapidly increasing in numbers. The cows give milk at the age of eighteen months. Those of the California breed give a very small quantity of milk, but when crossed with those from the United States and England, do very well. I saw two very fine bulls that had been imported from England. The sheep have lambs twice a year; those of the California breed yield a very inferior kind of wool, which is inclined to be hairy near the hide, and much matted. This breed has been crossed with the Leicester and other breeds, which has much improved it. The fleeces of the mixed breed are very heavy, weighing generally eight pounds, and some as much as twelve. Merinos have been tried, but they are not found to thrive. The California horses are not equal to those raised in Oregon; those bred near Vallanwatta are in most repute."

Of the kinds, quality and yield of the grain and grass grown at Vancouver, Capt. W. gives the following account: "The wheat averaged sixty-three pounds to the bushel; barley yields twenty bushels to the acre; buckwheat, in some seasons, gives a good crop, but it is by no means certain, owing to early frost. Oats do not thrive well. Peas, beans and potatoes yield abundantly. Little or no hay is made, the cattle being able to feed all the year round on the natural hay, which they find very nutritious, and fatten upon it. The grass grows up rapidly in the beginning of summer, and the subsequent heat and drouth convert it into hay, in which the juices are preserved. Besides this, they have on the farms along the river two luxuriant growths of grass; the first in the spring, and the second after the overflowing of the river subsides, which is generally in July and August. The last crop lasts the remainder of the season. Neither do they [the stock] require shelter, although they are penned in at night. The pens are moveable; and the use of them is not only for security against the wolves, but to manure the ground."

DISEASE IN POTATOES.

From several sections we hear there are already symptoms of this disease. B. P. Johnson, Esq., of Rome, writes us, July 18th:—

"I have examined, within the last few days, a number of fields, and find indications of the disease in almost every field. The upper leaves first show indications of the disease—the leaves shrivel or curl up, and it soon extends to the entire stalk. In some instances when the potatoes have been dug, on cutting them open, a small black spot is found in the centre. In others the potatoe appears sound and healthy.

"The disease is not confined, so far as my observations extends, to any particular variety of potatoe, or to any special location. Seed procured from the west, where no defect was apparent last year, suffers equally with seed selected from the crop raised in this section last year. I planted some this year, and made a preparation of salt, plaster and house ashes, of nearly equal quantities, though of ashes the most, and put about a handful in each hill before covering. The vines look remarkably well, and as yet are free from the curl in the leaves. Whether they will escape, a few days will determine.

"I am led to believe, that this disease is somewhat analogous to smut in wheat. As it has made its appearance so early in the season, I hope careful observations will be made, in order if possible to aim at some definite conclusions in relation to the cause of the disease and remedy."

Dr. Camp, of Windham, Greene co., has sent us a couple of insects, of a kind which he thinks causes the rot in potatoes. He states that the blight which precedes the rot, has already attacked the crop, and that on all the affected stalks, he finds more or less of these insects. The healthy vines, he states, have no insects on them.

Col. H. S. Randall's Merino Sheep.—Last season we noticed the enormous clip of the Merino sheep of Col. Henry S. Randall, of this village. This season we learn that his Paular stock, including two rams, averaged over six pounds of *well washed* wool per head! A three year old ram sheared 13 lbs. 8 oz., (the heaviest fleece, we believe, ever taken from a *three* year old Merino in the U. S.,) and a yearling 8 lbs. 8 oz. Many of the ewes sheared 6, 7 and 8 lbs. per head, and one the unparalleled weight of 9 lbs. 1 oz.! Col. R. received the first premium on rams, and the first and second on ewes, at the State Fair at Poughkeepsie, (1844,) and the gold medal of the Society, for the best managed and most profitable flock of sheep, at the annual winter meeting of the Society in Albany. Cortland against the world!—*Cortland Democrat.*

NOTES ON VERMONT FARMING.

(Continued from page 221.)

CATTLE.—Much less attention is paid to the improvement of cattle in this section than to sheep. Several years since some cattle from Connecticut, whose blood has not been duly ascertained, were brought here and considerably improved the stock. Some Durhams have been introduced, and herds are frequently met with in which traces of this blood are to be seen. Mr. PARIS FLETCHER, of Bridport, has a bull showing some fine points, purchased of George Vail, Esq., of Troy, and got by his bull Duke of Wellington. Mr. F. showed us some good yearlings and calves by this bull. Mr. Cha's. L. Smith, of Bristol, has several cows showing more or less Durham blood. Among them is a large, strong-framed, and well-made cow, said to have been imported as a full blood Durham. Several of his cows have the appearance of being large milkers. Mr. Wightman Chapman, of Weybridge, has an Ayrshire bull, presented him by J. P. Cushing, Esq., of Massachusetts.* He is a good bull—has a small, clean head, and clean limbs, a well-shaped body, and mellow skin. With the exception of Mr. Archibald's bull sent to the Poughkeepsie show from Montreal, he is decidedly the best Ayrshire bull we have ever seen. We saw in the neighborhood several very fine heifers by this bull, which have just come to milk. Their appearance is very promising, and we have no doubt they will make superior cows. Indeed we have no doubt that this bull has qualities which would greatly improve the stock of the neighborhood for all purposes.

At Mr. HYDER BARNES'S, in the town of Addison, we saw an uncommonly large ox. He is six years old, has as yet only been fed with hay and grass, and was at pasture in only good store trim. His girth at the chine, by our admeasurement, was eight feet six inches. In July last, (a year ago,) he weighed twenty-six hundred and twenty pounds. He is one of the largest oxen we ever saw in the same state of flesh, and if thoroughly fatted, would probably come nearly or quite up to the weight of any which have been slaughtered in this country. Though not *fine* his shape is better than that of such very large animals usually, and he may fatten well. His blood is not known. His color is a rather light red, with a white face, and narrow strip of white along the back.

We saw some good stock in the vicinity of Vergennes. Mr. Rodman Chapman introduced a bull here several years since, that we understood was bred by Colonel Jaques, of Massachusetts, which, from what we saw and heard, evidently much improved the stock. Mr. Chapman now has a cow by this bull, which is one of the best animals we saw in Vermont. Mr. [illegible]. Cook, of Charlotte, has a young bull and two heifers, which appear to be nearly full blood Devons, purchased in Litchfield county, Ct. They are pretty animals, the bull particularly so.

It is a matter of no less surprise than regret, that farmers in general in this superior grazing section, should be so indifferent to the quality of their cattle. While they have become generally awakened to the improvement of their sheep, and have become possessed of a highly profitable variety, they seem not to be aware that equal advantages would accrue from a systematic and judicious cultivation of the breed of cattle. We will not attempt to say what particular breed would be best adapted to this location. We have no doubt the introduction of the best bulls of either the Durham, Hereford, Devon, or Ayrshire breeds, would be productive of improvement.

It may serve to correct an error, if we remark here that we were in some instances shown stock under the name of Durham, which were a *burlesque* on that celebrated breed. If certain blue-skinned, black-eyed, black-nosed, coarse-boned animals, are thought to be *Durhams*, we cannot wonder at the prejudice which appears to exist with some against the breed!

HORSES.—Vermont, in common with New-Hampshire, has been much celebrated for its excellent horses,—distinguished for the quality of activity, great strength in proportion to size, ability to live and labor on comparatively little food, with remarkable hardiness and endurance. We shall not attempt a minute history of the Vermont horse—this would be fruitless. He is undoubtedly a mixture of several breeds. The first settlers, who were principally from Massachusetts, Connecticut, and Rhode-Island, carried with them such stock as they had. Connecticut and Rhode Island were in possession of valuable horses at a period as far back as the commencement of the American revolution. The horse called *Ranger*,—asterwards known in Virginia as Lindsey's Arabian, said to have been an Arab, presented by the Emperor of Morocco to the commander of a British frigate, and by the latter subseqently given to the captain of an American vessel,—was brought to Connecticut, and became the sire of a numerous and very superior progeny. General Washington's celebrated grey charger, was said to have been got by this horse. The *Naragansetts* of Rhode Island, (so called from being bred in the vicinity of Naragansett bay,) were famous at as early a day as the horses of Connecticut. What those Narragansetts were, we know not—it has been said they sprung from an imported English Hunter.

It is reasonable to suppose that the early emigrants to Vermont, took with them mares of these stocks; and from the contiguity of the state to the province of Lower Canada, there has always been a greater or less infusion of the blood of the Canadian French horse, which came originally from Normandy. The stock thus derived has been variously commingled, and mixed also with other blood introduced at different times. The rugged features of the country, the rigor of the climate, the mode of feeding, and the general management, have all tended to produce a hardy race, as well as to assimilate them in some degree to a general standard of points.

But the greatest celebrity of the Vermont horses has been unquestionably derived from a particular animal commonly known as the "old Justin Morgan horse." This horse is, we believe, universally admitted to have been the root of the famous race, to which the name of Morgans has been given, though there has been some diverse accounts of his origin. The most authentic history yet obtained, and which, so far as it goes is undoubtedly entitled to full belief, is given by a son of Justin Morgan, bearing his father's name, and now living in Stockbridge, Vt., [see Cultivator vol. IX, p. 99.] Mr. Morgan states that his father removed to Randolph, Vt., from Springfield, Mass.,—that in the year 1795 he visited Springfield, and on his return to Randolph took with him a "two years old colt, which was the same that has since been known all over New England as the Morgan horse." Mr. Morgan does not state anything in regard to the blood of the colt, but is confident his father obtained him in the vicinity of Springfield. This statement of Justin Morgan 2d, is confirmed by John Morgan of Lima, N. Y., [Cult., vol. IX. p. 110.] who states he was a near neighbor of Justice Morgan senior, previous to his removal to Vermont. He recollects the colt purchased by Justin Morgan, which he states was got "by a horse owned by Sealy Norton, of East Hartford, Conn., called the 'True Britton.'" This horse was said to have been stolen from Gen. Delancy, commander of the refugee troops on Long Island, during the Revolutionary war. The Delancy horse is said to have been nearly or quite thorough bred. [Skinner's Introduction to Youatt's Treatise on the Horse, p. 54.]

This we believe comprises all that is positively known in regard to the blood of the *first Morgan horse*. His immediate descendants were numerous, and remarkable for their good qualities, and striking resemblance to each other. Indeed so remarkable was their similarity that they were readily recognized by ordinary observers. Even when crossed with the common country stock, their peculiarities were often obvious to the second and third generation. A horse called "Sherman Morgan," got by the "old Morgan," and owned by Mr. Bellows, of Bellows'-Falls, Vermont, is generally believed to have done more towards giving "character and fame" to the Morgan stock, than any other horse, not excepting

* For a cut and description of this bull, see eighth vol. Cultivator, p. 101.

the first of that race and name. This horse lived to a great age, and his progeny, which were very numerous, were of unrivalled excellence as *roadsters*. Of the blood of the Sherman Morgan on the side of his dam, we know nothing, but hope to obtain more particulars in future. In 1831 this horse was kept by Col. Sam'l Jaques, at the Ten Hills farm, Charlestown, Mass. Col. J. considered him a horse having a rare combination of valuable qualities.

Though we never had the good fortune to see the Sherman Morgan, we saw many of his foals, and without disparaging other horses, can safely say, that they were, as *road horses*, superior to any other stock with which we have been acquainted. It will be recollected that Mr. Hill's horse Black Hawk, spoken of in our June number, is a son of the Sherman Morgan.

Perhaps there is not at the psesent time in existence, a horse which possesses more of the characteristics for which the Morgans are justly esteemed, than Black Hawk. He is certainly a noble and beautiful animal, and we cannot but think well calculated to produce a highly valuable stock. We say this from *conviction*, and with no other motive whatever than a wish to benefit the public.

And here our Vermont friends will permit us to suggest, that, in order to secure as far as possible, the valuable properties for which their horses have heretofore obtained such extensive notoriety, an Association for the Improvement of the Breed, be at once organized. The congeniality of the soil and climate of Vermont to produce the best of horses for certain purposes, has been shown and acknowledged by the high estimation in which many of them have been held wherever known. And had so valuable a stock as the Morgans originated in England, or in any country where superior animals are properly valued and the principles of breeding duly regarded, there can be no question that a successful effort would have been made to prevent its deterioration. But what, it may be asked, has been done in this case? Instead of efforts to preserve and improve their peculiar stock, is it not a fact that the practice in general has been quite akin to that of the boy, who, according to the fable, "killed the goose which laid the golden egg?" In the anxiety to realize *immediate* profits, ultimate consequences have too often, it is feared, been overlooked; and the tempting offers of a hundred, or a hundred and fifty dollars, have too frequently induced the farmer to part with a valuable mare, apparently regardless of the fact that by doing so he was depriving himself of an important pecuniary resource. In this way much of the best breeding stock has been taken away from Vermont, and worn out in the stages-coaches and other carriages of other states, without being allowed to "increase and multiply." This has so far operated to lessen the number of good horses in the state, that there are not now, probably, as many as there were a few years ago. The object of such an assoiciation as is suggested, should be to secure the best mares and stallions for breeding—an object which beyond all doubt might be effected with advantage to the individuals engaged in it, and still greater advantage to the public. We trust that the obvious necessity of the case will induce some effective action among those farmers who are desirous that Vermont should maintain her pre-eminence for rearing valuable horses.

At Addison, we saw the horse *Eclipse*, owned by Mr. E. Long, Cambridge, N. Y., which received the first premium of the New-York State Agricultural Society in 1842. This horse, we believe, is a son of the celebrated American Eclipse. We should suppose him to be an animal well calculated to produce horses of large size, with fine form and spirit.

We were shown some mares of excellent points. Among the best were those of Mr. Y. G. Drake and Mr. Jewett, Weybridge, and Mr. Langdon, of New Haven.

ORCHARDS, FRUITS &c.—Though the winters of Vermont are long and cold, the hardier fruits, as the apple, pear, and plum, thrive well. We have never seen finer apples than we tasted at several places. Some Spitzenbergs shown us by Mr. H. S. Morse, Shelburne, were superior examples of that noted fruit. Plum-trees appear very flourishing in many places, and we were told produced abundantly.

In the garden of the Hon. Ezra Meech, Shelburne, we found vegetation more forward than it was generally in the gardens of this city and Troy at the same time. At this we were somewhat surprised, especially, as besides being more than a hundred miles farther north than Albany, it was located immediately on the verge of Lake Champlain, naturally exposed to the full sweep of the coldest winds. We soon discovered, however, that the garden was completely protected by a belt of white ceder—the American *Arbor vitæ*. This had so broken off the cold winds that the effect was equivalent to a transfer of the spot several degrees to the south. This is a striking example of the advantages of protection from cold by means of evergreens—a means which ought to be generally adopted in the northern states, and all bleak, exposed sections. Mr. Meach has a pretty conservatory, well filled with plants, which, together with the garden, appear to be well managed. We regretted that circumstances prevented our examining Mr. Meech's extensive farm. We understood him to say that he kept two thousand sheep, and two hundred cattle, &c.

FACILITIES FOR MANUFACTURING.—Few sections of the country can compare in this respect with those portions of Vermont through which we passed. The valley of the Otter-creek, especially, possesses an almost incalculable water-power, but a small portion of which, comparatively, is yet improved. In the space of eleven miles, from the commencement of the rapids above Middlebury-falls, to the foot of the falls at Vergennes, there is an aggregate fall of three hundred and ten feet. For a large portion of this distance, the banks of the stream are solid, affording numerous level and excellent sites for the erection of manufacturing buildings. Establishments for the manufacture of wool, and for other purposes, are now in operation at Middlebury, Weybridge, and Vergennes. We were informed that they all do a successful business, and it is believed that a further investment of capital might be extensively and profitably made here. We would invite the attention of manufacturing capitalists to these facilities.

FARM OF HENRY S. MORSE.

Among the fine farms we visited during our excursion to Vermont, we were not more pleased with any than with that of Mr. HENRY S. MORSE, situated in Shelburne, Chittenden county, about six miles from Burlington. It consists of one thousand acres, lying in a body. Its location is beautiful, being on a large swell, commanding a fine view of the lake and the interesting scenery on either side, for a wide extent.

Mr. Morse devotes his farm principally to keeping sheep, though he is under the necessity of keeping considerable other stock, (horses and cattle,) to carry on all his operations. Cattle are also sometimes fatted for market, but this branch has latterly been found less profitable than wool-growing. He has two thousand sheep, nearly all of which are of the Merino and Saxon blood. The whole flock averaged last year a fraction over three pounds per fleece. He pursues a very judicious course with his wethers. He always feeds them well, and at three and four years old they receive high feeding through the winter, are sheared as early as the season will permit, and sold soon after, to be driven to Brighton for slaughter. Mr. Morse had, when we were there, two hundred weathers which would be ready for sale as soon as they could be shorn, and were considered worth $2,50 per head. They were the best lot we ever saw of that breed—fat and large. They yielded on an average last year five and a half pounds of wool, worth forty cents per pound, or $2,20 each. He has also another lot, younger than these, which will be ready for sale next season. He raises peas and potatoes for feeding his sheep and other stock in winter. He is much in favor of the pea for sheep. The crop is mowed, properly cured, put in the barn and fed out to the fatting sheep in winter, without threshing. He finds this the most valuable crop he can raise for that purpose. The store-sheep are likewise fed with peas in small quantities.

The potatoe is well liked, in connection with other food, for sheep, and particularly for fatting cattle. The stock fatten well on it, and the beef is of good quality. The only objection to the potatoe, is the difficulty of feeding it in cold weather.

WASHING SHEEP.—Mr. Morse's plan for doing this is worthy of notice. A dam is thrown across a small, clear and rapid stream, near his barns. The bottom of the pond thus raised, is so covered with small stones that it is impossible to make the water muddy or sandy in the least. A platform is laid from which the sheep are taken into the water, and when their wool is cleaned, they pass out by a hard, McAdamized bank, to a clean grass-lot on the opposite side. Four men can work in the water at once, and two thousand sheep may be completely washed here in one day.

BARNS AND WINTER SHELTER.—Mr. Morse's barn and fixtures for winter sheltering and feeding, are well arranged. The yards are well protected from the coldest winds by sheds attached to the barns. In the sheds are racks and feeding boxes sufficient to accommodate the sheep in bad weather. In fair weather they are mostly fed out of doors. When the yards are covered with snow and are hard and clean, they are sometimes foddered on the snow. Water is brought in an aqueduct, and there are troughs in each yard through which the water is constantly running.

GRASS LANDS.—Mr. Morse mows about three hundred acres annually. The average yield of hay is one and a half to two tons per acre. He has one field of sixty acres, beautifully set in grass. He prefers plowing his meadows or grass lands as little as possible. The first object is to get them as level and smooth as possible, and the grass thick and even. When the sward becomes bound or the grass declining, manure is spread on in autumn, made fine and worked in with a bush or harrow. The ground is naturally moist, and the manure being put on at this season of the year is not wasted by evaporation. The fields show that the system answers well.

FENCING, DRAINING, &C.—A considerable part of Mr. Morse's farm, was naturally too wet. In the division of the farm by fences, he has had regard to remedying this defect. Trenches have been dug to the depth of two or three feet, (according to the nature of the ground as to wetness,) and filled with mall stones, of which there have been considerable quantities on some parts of the farm. The trenches so filled answer the purpose of drains, and the fences are erected on them. What is called "half wall," is a kind of fence quite commonly made on the farm. It consists of stones, the largest of which would not probably weigh over two hundred pounds, laid up in a double row, to the height of two and a half to three feet, and the fence finished by two boards or rails, the posts for which are set before the stones are laid up. Besides these trenches other drains have been made and covered. In this way, many acres, which, when Mr. Morse came into possesssion of the farm, a few years ago, were nearly worthless, now constitute some of his best lands for hay.

MAPLE SUGAR.—The manufacture of this article is carried on to a greater extent in Vermont than in any other part of the Union. It is now in many cases produced with profit, and no doubt may be made a source of considerable income. We were surprised at the quantity of sugar which is produced from a tree. We saw a handsome sample of a hundred and thirty-six pounds made from twelve trees, by Mr. Isaac Landon, Cornwall. Mr. Morse made a thousand pounds, and Mr. Lyman Hall, a neighbor of Mr. Morse's, made twelve hundred pounds last spring. We have samples of Mr. Morse's which are excellent. The whole lot would readily command ten cents per pound. The process of manufacture has been much improved of late. Mr. M. now boils the sap in shallow pans, and it is "stirred off" in graining. But as we do not fully understand the business, we hope Mr. Morse or Mr. Hall will furnish an article in relation to it.

The quantity of sugar that might be produced from an acre properly planted with the sugar maple, has never, perhaps, been ascertained; but we have no doubt that at least fifteen hundred pounds might be easily obtained. Allowing one tree to a square rod, or a hundred and sixty to the acre, and estimating the produce at ten pounds to the tree, (which is less than is frequently got,) the aggregate produce would be sixteen hundred pounds. The trees might often grow on land not valuable for other purposes, as on rocky hill-sides, and by the borders of fields and high ways—so set as not to keep the roads wet by their shade. What are called "second growth" trees are preferred for sugar. They have generally larger tops and more leaves, by which the sap is probably better elaborated.

TRIAL OF THE CENTRE DRAFT PLOWS.

MR. JAMES PEDDER, general agent for the sale of Prouty and company's CENTRE DRAFT PLOWS, brought to this city in May last a number of these implements. They being comparatively but little known in this vicinity, several persons were desirous that a public trial should be made with them under the supervision of a judicious and impartial committee. This was more especially wished, as an unfavorable report had reached this country in regard to the performance of this plow, and that of Messrs. Ruggles, Nourse and Mason, at the exhibition of the Royal Agricultural Society of England last year. The work of the American plows at this trial was represented as *decidedly bad*—a result for which we are wholly unable to account, except on the ground of the plowmen not being well acquainted with the somewhat peculiar construction and operation of these plows. We have seen the operation of several of the most celebrated English and Scotch plows, which have been brought to this country, among which we will name that of the celebrated *Ransome* plow, which received the highest prize at the English trial referred to. With the exception of this, we are confident we have seen no imported plow, which, everything considered, can be deemed equal to the American plows mentioned. The Ransome plow which we saw, was imported a few years since. It is unquestionably a good one. Some late improvements are said to have been added, of which we cannot speak. We know not what would have been the result of a comparative trial of this with the best plows made in this country; we however hope that such trial will yet be made—but at present we can only express our concurrence generally with the conclusions of the committee in regard to the work of the Centre Draft Plow, as set forth in the following report:

REPORT OF THE COMMITTEE.

We whose names are underwritten were solicited to examine the Centre Draught Plow and witness its performance, at the farm of T. Hillhouse, Esq. The performance of this duty was certainly far from being courted by any one of us. But having been selected for that purpose, it would have been uncourteous to have declined; and having performed the duty, it is incumbent upon us to report the result of our examination. We have no desire, we must state in the outset, unduly to magnify the Centre Draught Plow, nor to praise unduly its performance. Neither can we be prevailed upon (even if desired so to do) to undervalue all or any of the various new and improved plows now before the agricultural community, which are brought in competition with it. But we nevertheless willingly report truly and fairly the facts in the case.

The committee are almost strangers to each other—inhabitants of different parts of the state—chiefly, if not entirely, practical men, and accustomed to use (and perhaps prejudiced in favor of) other plows. Yet, with entire unanimity, we concur in the opinion that the Centre Draft Plow is not surpassed by any plow with which any of us are acquainted. The work performed by it is equal in excellence to any thing we have ever seen, and performed with as little labor and fatigue by both plowman and team, as it could, in our opinion, possibly be done.

Perhaps nothing more than the above need be said, as it comprises in general terms all that we can say, or that it can be desirable to say. However we will add:

This plow can be adjusted with the greatest nicety,

both as respects the depth of the furrow and the width of furrow slice, with perfect facility and ease.

We are quite sure that it runs very light and is of course easy for the team. But we did not make any trials with the dynamometer, and therefore are unable to make any comparative statement, between the draught of this plow and that of others. All we pretend to offer upon this point, is the result of our observation upon the apparent effort and fatigue of the team; a conclusion which can be relied on to some extent, though we admit, far from being conclusive. We however would remark, by way of fortifying our opinion, that at the celebrated trial of plows, made at Worcester, a year or two since, this plow bore off the premium of one hundred dollars, after a very severe competition with some of the most celebrated plows. So far as the plowman is concerned, we can with certainty assert, that severe labor and strenuous effort on his part is almost entirely done away. Even skill is comparatively useless in working with this plow.

This may seem a strong position to take; but in confirmation of it we must state, that we saw furrow after furrow plowed with great nicety, the hand of the plowman having been laid to the plow only to enter it at the commencement of the furrow. As to the style of work performed, we can only say, that some of the plows lap the furrow slice, (and they are those which we prefer,) and to which our report mainly refers, while another (the one to which the one hundred dollar premium was awarded at Worcester,) turns the furrows flat.

The workmanship of the plow is excellent, and we beg specially to commend the casting of the share from a composition which is much harder than ordinary cast iron, thus ensuring a great degree of durability to the plowshare. If to this it be added that the share is also constructed upon the self-sharpening principle, it can easily be conceived that the purchasers of these plows are ensured against the too frequent recurrence of the vexation that results from the rapid and often *unexpected* wear of the share.

In conclusion, we would remark that this plow has obtained great celebrity, and has received and is daily receiving the cordial approbation of men whose opinion, have far greater weight than ours. We believe that is has lost none of its celebrity by the trial which we witnessed, for out of the numerous company present there was not one who did not seem to be both surprised and delighted with the performance of the plow.

It may be asked how it comes that both this plow and the Worcester county plows, Messrs. Ruggles, Nourse & Mason's, were condemned at the fair of the English Agricultural Society last year. Nor is it easy to answer the question. Prejudice, national prejudice may have had something to do with it. All we can say is, that some of the committee at least were practical men: we have reported only that which we saw. Moreover, there was present on the ground an English plowman, recently arrived, whose judgment was perfectly unbiased, who pronounced this equal to any English plow he had ever handled, and fully concurred with the committee in the opinion expressed by them.

J. B. Nott, Albany Co.
T. Hillhouse, "
John McVean, Monroe Co.
C. Hannam, Genesee Co.

PLOWING FOR WHEAT.

But few farmers are willing to undertake the purchase and use of the subsoil plow, but all may adopt the practice of *deep plowing* by the ordinary method. In many parts of the country, the soil may be much improved in its wheat-raising qualities, by throwing up and mixing with the surface, a small portion of the subsoil. In some instances this has been attended with strikingly successful effects. In others, where the subsoil has been thrown on the surface, the increase in the growth of wheat has been almost incredible. A neighbor scattered the earth taken from a ditch over the surface for many feet on each side. Afterwards when the crop of wheat averaged on the rest of the field scarcely five bushels per acre, the portion which had been thus covered with subsoil, yielded from twenty to twenty-five bushels per acre. In this case, the soil was light, and the subsoil somewhat clayey, and contained a small portion of carbonate of lime, effervescing slightly in acid; the operation rendered the soil stronger, firmer, and better adapted to the growth of wheat. Doubtless large portions of our country might be thus greatly, and perhaps permanently improved, by the use of such manure, thus lying in immense quantities just beneath the surface. But there may be other subsoils not only useless, but actually detrimental; hence the necessity of discrimination and care.

PEAT AND POND MUD.

In many localities, it is not practicable to obtain these enriching substances except at the driest seasons of the year, when the water is evaporated which usually covers them. The vast quantities of them which abound in many parts of the country, especially of peat and swamp muck, while the scant crops of the adjoining fields show how much their presence is needed, ought to stimulate a greater number of our farmers to seize the present opportunity to cart them upon their fields.

Many have been disappointed from the use of swamp muck or peat. Its results are much less striking than those of farm yard manure, not only because it possesses less inherent richness, but because it contains far less of soluble parts, and consequently imparts its strength more slowly to growing plants. This quality however only makes it more enduring. Chemists have found that by decoction in water, vegetable mould loses a small portion of its weight by solution; but if the remaining insoluble portion is exposed to air and moisture a few months, another part may be again dissolved. Thus, peat, muck, and all decayed vegetable fibre, becomes a slow, but lasting source of nourishment to plants.

Disappointment also results from the want of thorough intermixture with the soil. If peat or muck is merely spread in masses upon the surface of the soil, and then plowed in, it rarely proves of much benefit, until, by several years tillage, it becomes thoroughly intermixed. To prevent such failure, it should be very thoroughly and repeatedly harrowed, so as to promote a thorough admixture with the surface soil, before it is turned under by the plow.

By such treatment as this, heavy soils may often be greatly improved, and rendered lighter and more free, as well as more fertile.

But it is when shovelled out and dried, to be mixed with farm yard manure, as a recipient for its volatile or liquid parts, that peat or muck becomes pre-eminently valuable. We say *dried* because if it is already saturated with water, of which it will often take in *five-sixths of its own weight*, it cannot absorb the liquid portions of the manure. But if well dried before hand, that is, if these five-sixths of water are expelled, it will then absorb five-sixths of its weight in liquid manure, and it then becomes eminently fertilizing. The chief reason that the application of peat to barn-yards has not proved of greater value, is, that farmers have applied it when it was already filled with water, and consequently it could take in little of any thing else.

When peat or muck is to be drawn to a distance, it is obvious that a great saving would be made by shovelling it out under large coarse sheds, some months before drawing, that the water may be well evaporated, and so obviate the necessity of drawing several tons of water to every ton of peat.

Pond mud is sometimes a highly fertilizing substance. Where the materials which streams deposit, consist of road-washings, or the drainings of farm yards or of manured fields, they constitute frequently a compost of the richest kind. The same remark will apply to stagnant ponds which have been much frequented by animals, and which have become dry. In the latter part of summer and early in autumn, these valuable materials may be easily carted out on the adjacent lands, and they form one of the best and most suitable manures for wheat, being free from the objections which exist in cases of unfermented or long farm-yard manure.

SHELTER FOR SHEEP.

Every one has perhaps heard of the man whose roof remained unrepaired to the perpetual detriment of all dry articles and sound lungs within doors,—because when it rained he could not repair it, and when the weather was fair he did not need the repair. For a similar reason, many flocks of sheep pass year after year, unprotected because shelters are not needed in summer, and cannot be made in the depth of winter. To induce their owners to adopt an improvement, and provide, in time, suitable shelter for their flocks, we wish to state a few facts in the case.

Lewis A. Morell, of Tompkins county, N. Y., before he had provided shelter for his flock of Saxon sheep, 1200 in number, lost from 70 to 100, during winter, and once lost 150. For the four successive years after protection, the average number wintered being 1,800, the average yearly loss amounted to only 31, being less than $1\frac{3}{4}$ per cent.

J. W. Childers, of the English Agricultural Society, brought his sheep to shelter about Christmas, and found before two days that they did not eat so much as when exposed, by the proportion of five to three. When in the field, his flock required fifty baskets full of turneps a day; but when sheltered they needed only thirty a day. "Yet such great progress," said he, "did they make, that you would have thought they had been eating fifty baskets a day, when shut up, and only thirty when in the field." In another experiment, which was accompanied by accurate weighing and measuring, where turneps and oil-cake were given as food, the quantity of turneps diminished in a few weeks nearly one quarter, and the oil-cake diminished about one-third; while the increase of weight resulting from shelter was more than one-third. The Editor of the English Agricultural Gazette, inferred from actual experiments, performed by himself, that twice as many sheep might be kept in a fatting condition on the same quantity of food under perfect shelter, as under entire exposure. If these results were obtained in the mild climate of England, what may not be expected in our severe winters?

L. A. Morell is satisfied that at least one ton of hay to the hundred sheep is saved by protection every winter. "Of oats, which I fed liberally before protection, the amount saved is equivalent to 500 bushels each year, and yet my sheep have been in finer order than when they were grained; showing, notwithstanding the virtue of grain, that there is *more virtue in warm shelter.*" The same successful manager has also found that the aggregate increase in four clips of wool from his flock, resulting from protection, amounted to 1250 lbs.; and that the *increased* number of lambs exceeded one hundred a year.

In view of these facts, we wish every farmer to make a calculation of the whole amount of food thus saved every winter, the increase in the weight of his sheep, the saving of life, the increase of wool, and the increase in the number of his flock.

If it will cost one dollar per head, to winter sheep by the ordinary way, then to winter 1000 would cost $1,000.

One third of this saved would be.....	$333
The difference in loss by wintering, according to L. A. Morell, would be about 50 sheep, which at $2 each, would amount to.....	100
Putting the increased value of his sheep, by increase of weight, at one tenth the value of the flock, ...	200
Increase in the fleece, say 160 lbs.,.....	60
Increase in lambs, say 60,.....	50
	$743

equal the total saving every year, by the use of suitable shelter, at a very moderate estimate, and which would abundantly pay for suitable sheds, if they required erecting every year.

Now is the time of year to make preparation, to prevent the disastrous results, which must always attend exposure through our long, stormy, and freezing winters. For directions in the construction of sheep sheds, see the Cultivator, vol. 7, p. 15.

LECTURES ON THE CHEMISTRY OF VEGETATION.

We have been exceedingly interested in reading the reported sketches of Dr. Playfair's lectures on this subject, lately published in our foreign exchange papers. We have, however, only room for a brief notice of the most interesting portions. The point to which he first called particular attention, was the great care displayed by nature in the introduction and protection of seeds. Some were surrounded with a hard scaly armour of flint as in the seeds of corn; some have thick coats, such as beans and peas: others are protected by hard shells, and placed in the midst of a pulpy, fleshy covering, destined as manure for the seed, such as the peach. In all, the greatest care was taken to protect the seed from injury until the period of germination. Three parts were distinguished in all seeds; 1st, the *cotyledon*, which forms much the largest portion of the kernel, and which is in fact the magazine of food for the young plant; 2nd, the *plumule*, plume or *gemmule*, which is the young embryo that is afterwards to become the stem of the plant; 3rd, the *radicle*, or part which is to become the roots. In the common garden bean the cotyledon is divided into two portions called lobes; the plumule or embryo stem is the small white point observed at the upper part of the divisions or lobes, and the radicle is the curved white cone which is found at the base. The most frequent form in seeds was two cotyledons; but in other seeds, for example the grasses, in which the food is only in one cotyledon, and in other seeds, there were compartments for the primary food. Consequently, botanists divided plants into two great divisions; those having the food of the embryo stored in one magazine—the monocotyledonous plant; and those having two or more compartments —the dicotyledonous or polycotyledonous plants. These two plants possess capital differences. As soon as those essential parts of a seed, the plumule, radicle, and cotyledon, are formed, it loses all activity, and life apparently becomes suspended, until called forth for the purpose of re-production. Under favorble circumstances, seeds may be kept for a very long time in this inactive state. He had himself seen, in Mr. Miles' garden, at Bristol, wheat growing, the seeds of which had been found in a mummy; Pliny states a case where he had known wheat to grow after 100 years; and Home mentions an instance in which rye grew after 149 years. Coffee beans are the seeds which most easily lose their suspended vitality; for they refuse to grow, unless planted immediately after being taken from the bush. But expose a seed to the combined influence of light, air and moisture, and the suspended vitality becomes active. The embryo plant feeds upon the nutriment in the cotyledon; the radicle protrudes from the seed, descends into the ground, and forms roots; the little plumule ascends, and forms a stem, and the cotyledon shrivels up and disappears. The little plant now feeds itself from the air and the soil, and grows apace. The stem increases in height and throws out branches, and leaves, and the roots diverge in search of food. It was long a question of dispute to what force the form of a tree was owing. Some philosophers said the roots descended into the earth, because they loved moisture, and the stem ascended because it loved the air. But Detrochet showed this was not the case; for he took a box and bored holes in the bottom of it, placing beans over each hole, and some moist earth on top of the bean. The roots should have grown up in the moist earth and the stems downward into the air, if that opinion had been correct. But this is not the case; for the radicles went downwards into the air, and the stems ascended into the earth; and in a short time they shriveled away and died. Be the force, then, what it may, roots have a natural tendency to descend, and the stems to ascend. That this has some intimate connection with gravitation, Knight has shown by his beautiful experiment. Mr. Knight arranged wheels driven by water, in such a way that he could either drive them horizontally or vertically, and regulate their speed. He then planted beans on the rim of the wheel, in conditions favorable to growth, and then set his wheels in motion. The effect of this was, that, when the wheel attained a certain degree of speed, which, in the case of the wheel in ques-

tion, was two hundred and fifty rotations in a minute, a new force came into operation—the centrifugal force—and overcame that of gravitation. The roots, instead of descending, obeyed this new force, growing outwards, forming in fact, prolongations of the radii of the wheel; while the stems took the opposite direction, until they came in contact with the axis. But when the wheel revolved less rapidly, so that the force of gravitation was not overcome but merely modified, the radicles pointed downwards, about ten degrees from the horizon, and the plumules pointed upwards at the same angle, and the inclination was greater or less, according as the wheel revolved more or less rapidly. By this capital experiment, Mr. Knight proved that the descent of the roots into the soil, is essentially connected with gravitation. Botanists then considered that the lateral branches were due to the same cause; their natural tendency being to proceed upwards, but gravitation pulling them downwards. To a certain degree only, is this correct. Parasites do not obey the law of the earth's attraction; for they always grow at right angles to the plant to which they are attached, whether that be upwards, downwards, or laterally. Now, branches given off from the stem may be considered parasites, which would grow at right angles from the stem horizontally; but they were also influenced by the upward direction, so that they grow upwards and outwards, and to a certain extent also by attraction, so that their direction is varied. The directions of the stem and leaves, in fact all the green parts, are much influenced by light, which is therefore one great cause of their upward direction, as shown even in the case of a root; when its tip becomes green it grows upwards like a branch; and a stem, put under the ground away from light, grows downwards like a root. Similar love for light is seen in the leaf; the upper part of a leaf is deeper green than the lower surface, and bends upwards to the sky; while the latter is directed to the earth. In some cases, both the upper and under surfaces of the leaf are equally green, and then its edges point to the sky. This was strikingly seen in the plant called bent grass. It had its rough or unpolished side upwards, and its beautiful smooth green side downwards, and it twisted up its leaves to the sun so that the polished side should turn upwards to the light.

The first point in the growth of plants is the germination of the seed, the cotyledon of which contains a stored-up nutriment for the embryo—consisting of some mineral matter, with starch, gum, cheese, and fatty oils; although in some seeds, as in the anise and cummin, the fixed fat is substituted by a volatile oil. The analysis of Boussingault gave 27 per cent. of cheese in peas; his (Dr. Playfair's) own gave 29 per cent.; the two varieties obviously differing. The analysis of the French chemists gave 10 per cent. of this cheesing matter in oats; those made by the lecturer himself, yield between 11 and 12 per cent. The oily matters also vary: some seeds, as that of the colewort, contain 40 per cent of oil; while that of wheat does not contain one per cent. It would be seen then, that in order that a seed should germinate, the concurrence of a proper temperature of moisture and of air was absolutely essential. Formerly, physiologists believed that light was injurious to germination; this error originating in the fact, that seeds germinate best at a certain distance beneath the surface of the ground. But Saussure showed that the apparently injurious effect of light was owing to the drying of the seed when too near the surface. He took two seeds, placed one of them in an opaque, the other in a transparent glass; watering them both alike; and he found that the seeds in the transparent glass germinated first. When seeds are placed under a jar of air, and properly supplied with water, the radicles and the stem soon appear. Supposing that there is no alteration in temperature or in conditions, Saussure, in his first experiments, found that the bulk of the air remained unchanged, although a quantity of the oxygen had been abstracted, and replaced by carbonic acid. This led Saussure to believe, that the first act of germination was simply the extraction of carbon by means of oxygen. Oxygen is quite essential to germination, which cannot be made to take place in any gas not mixed with this element. But what is very curious, carbonic acid gas, which is the primary food of plants is positively injurious to germination. In fact, germination proceeds more rapidly, if fragments of lime are placed along with the seeds to absorb the carbonic acid. Saussure was not quite correct in his first experiments; for, on inspecting them with minute accuracy, he found that some plants actually did increase the bulk of the air, while others diminished the bulk. To Boussingault belongs the honor of having explained this phenomena. That distinguished philosopher, during the last year, had made some excellent experiments on germination. He analysed some seeds before germination, and set others to germinate. When the plumule and radicle began to appear, he analysed them again, and so on until the stems and the leaves were distinctly formed. The results of his experiments were, as Saussure had perceived, that there is a quantity of carbon abstracted by oxygen; but the loss of weight is greater than can be accounted for by the carbon removed. Some of the oxygen in the seed has also disappeared, so that it was obvious that part of the carbon had become burned at the expense of the oxygen existing in the seed itself; and this circumstance completely accounts for the alteration in the volume of air observed by Saussure. But, after all, this is only the ultimate view of the process; for there can be little doubt, that the operations in progress are much more complex than the immediate extraction of carbon. If seeds in the act of germination be put upon blue litmus paper, the blue color becomes changed into a red, showing distinctly that an acid is produced during the act. Becquenel thought this was acetic acid; but Boussingault suggests with much more plausibility, that it is the acid obtained from milk—the lactic acid. Be that as it may, the formation of the acid indicates that there are intermediate steps in germination; respecting which the chemist is entirely ignorant. When the seeds are examined after the first act of germination, the process is very difficult to follow. The act of germination still progresses; but the act of vegetation does so too, and both are in antagonism. Germination abstracts carbon from the seed; vegetation adds carbon by drawing it from the atmosphere, in the form of carbonic acid. One thing, however, is certain, from Boussingault's analysis, that ammonia now disappears from the seed. These were merely indications how to proceed in our investigations, in order to develope this most interesting act of passive into active life. At present our information might be considered almost *nil;* but the recent researches are full of hope; and if carried on with the united care of the physiologists and the chemist, will doubtless lead us nearer to truth. The uncertainty as to the nutrition of the embryo, ends with the development of the leaves; the young plant has been ushered into being, and we can now clearly follow its course to maturity. In conclusion, he would draw attention to this singular first act of life. The physical function of animals was to expire carbonic acid; that of plants to expire oxygen. But the first act of the embryo was to assume this high function of animals. Reason on this as we might, there was some curious mystery to develope in the extraordinary relations of life. The first act of vegetable existence was one possessed by the most elevated of animals; but then again it assimilated itself to similar functions in the lowest order of vegetables. The fungi do the same; they do not live on the air, but on decaying substances, and breathe out carbonic acid. Was the first act of vegetation a lofty or low act of life? If the exhalation of oxygen from plants were one of the most important purposes of their life (as it doubtless was,) how came it that the lowest order of animals, the animalcules, also possess this function? These were strange anomalies, which however inexplicable at present, philosophers should not relax in their endeavors to penetrate. In fact, as he proceeded he thought he should be able to trace out, in this apparent contradiction, the most beautiful harmony and most exquisite design of means to end—a harmony and design which make us only the more regret that our own ignorance and want of power prevent us giving to them at present a more intimate comprehension.

INQUIRIES.

ARTICHOKES, &c.—G. A. F. (Spartanburg Dist., S. C.) Clover hay, corn fodder, or straw, would do well to feed with artichokes. Some kind of dry food is required to counteract the laxative tendency of the roots. The *tops* make quite good fodder cut and dried before being injured by frost. A mode of planting which appears to do well is, to plant in drills three to four feet apart and ten to twelve inches in the row. We should hardly think any crop would grow to good advantage on the same ground with the artichokes.

TOBACCO.—J. P. (New-York.) An able article on the subject to which your inquiries are directed, will be found in our last volume, page 89.

WALLS OF COBBLE STONES.—"A Subscriber," living in a section where this material is extremely plenty, wishes to know in what manner it could be best made into a permanent wall—what would be the necessary cost per rod, &c. The information will be thankfully received from any who is acquainted with the subject.

SHEPHERD'S DOGS.—Any person having this breed of dogs to dispose of, may find purchasers by giving us notice to that effect, with the price.

VEGETABLES FOR SEED.

Early sown beets, carrots, turneps, parsnips, &c., are not thought so good for seed as those which are sown later, because the advanced ripeness of the vegetable tends to decay, and from the defect of the roots, the seed-shoots are less vigorous than when the plant is allowed less growth the first year. It is therefore recommended that such of those vegetables as are intended for seed, should not be sown till June. The roots will then keep perfectly sound through the winter, and will throw up vigorous sprouts in the spring which will bear good seed.

It has been said that unripe potatoes are also best for seed. We have never tested this by experiment, but it is not unlikely that they may partake somewhat of the same qualities as the vegetables above mentioned, and that the green or unripe ones might sprout and grow the most vigorously.

DONATION IN AID OF AGRICULTURE.

The Hon. ZADOC PRATT has presented to the Greene County Agricultural Society the sum of $250, "to be distributed," in the language of the donor, "along with their other funds, in suitable premiums, at such time and in such manner as the society may judge most advantageous to the cause of domestic industry." It, is, however, suggested that a liberal portion of the premiums might be advantageously bestowed for encouraging attention to the breeds of cattle and horses best suited to that highland region, and for exciting emulation in the making of butter and cheese. Mr. Pratt also further remarks:

"Without wishing to obtrude my opinions on men more familiar with the subject, I would also respectfully suggest that the premium list be arranged so as to excite more attention to the improvement of our native breed of cattle and horses as probably calculated to weather our climate better than some of the imported cattle. Though I would not be understood as underrating the very valuable qualities developed by careful experienced culture in the management of live stock, as well as of the soil."

On the reception of the above donation, resolutions expressive of the thanks of the society were unanimously passed, and "the Executive Committee also resolved, that in arranging the premium list for the next annual fair, premium would be given as far as it could consistently be done, in accordance with the suggestions of the letter accompanying the donation."

EARLY PROGENY.—The *Buckeye Eagle*, (Marion, O.) says a Durham heifer belonging to J. S. Copeland, of that place, aged only 15 months and 26 days, gave birth, on the 13th ult., to a well grown, living calf! Both mother and calf were doing well.

CATTLE SHOWS THIS YEAR.

New-York State, at Utica, Sept. 16, 17, 18—Dutchess County at Poughkeepsie, Oct. 1—Montgomery County, at Canajoharie, Oct. 5—Madison County, at Hamilton, Oct. 1, 2—Otsego County, at Cooperstown, Oct. 1, 2—Oneida County, at Rome, Sept. 9, 10—Greene County, at Cairo, Sept. 24, 25.

Hartford, Ct., Oct. 1, 2, 3—New-Haven, Oct. 1, 2.

Hampden, Mass., at Springfield, Oct. 8, 9.

FAMILY ALMANAC.

MR. EDITOR—In addition to the notice in Cultivator of last mo., (p. 225,) offering premiums for the best mode of *keeping accounts*, &c., the writer further states that he wishes to give in the forthcoming *Family Almanac*, as complete a list of the *Agricultural*, *Religious*, and *Scientific* periodicals of the U. S. as possible. Publishers of such are therefore requested to forward one or more of their nos. to the undersigned by 1st September.

It is intended to publish in this work, a table of *distances*, *freights*, and *fares*, on all the great thoroughfares of the country, by steam, rail, and stage; as accurate and extensive as practicable. Correct and definite information in furtherance of this object, will be thankfully received, especially from the "great west."

The above work being adapted to, and circulating in all parts of the country, will, it is believed, afford a proper medium for advertisements and circulars of general interest. Such will be inserted at the close of the work, on the same terms as charged in the Cultivator—$1, for 100 words. Address, (post paid), A. F. W., Washington, D. C.

SCRAPS,

Condensed from various Exchange Papers.

SOAP SUDS AS MANURE.—A writer in the London Gardener's Journal, says he found the suds from a tank, when applied to hyacinths in pots, to produce extraordinary effects,—more so than the application of Potter's liquid guano. They also produced very satisfactory results when applied to strawberries and French beans. Circumstances, however, may render it eminently successful only in peculiar cases.

CARROTS FOR HORSES.—The proprietor of an extensive livery stable feeds his horses on carrots with oats, and considers a peck of carrots and a peck of oats as better for a horse than half a bushel of oats alone.

TO GET RID OF LOGS, on new lands, and make use of them for manure, some persons pursue the following course: Plow a deep furrow alongside the log, and deepen it by two or three successive furrows, and roll the log in, covering it with one or two more furrows. It completely rots in a very few years, and is then gradually mixed with soil by subsequent cultivation.

EGGS.—A moderate computation would place the number of eggs, consumed annually in the United States, according to Commissioner Ellsworth, at 1,400,000,000; which at an average of 6 cents a dozen, would amount to $7,000,000.

TO FRIGHTEN CROWS.—A correspondent of the Boston Cultivator, says nothing is better than to place a few empty barrels in different parts of the field—that the crows are afraid of nothing in plain view, but the fear of an ambscade is sufficient to keep them away. "As to placing effigies in a field for the above purpose, it is only an insult to their common sense; it was but yesterday I saw one of those black-coated gentlemen, perched on a limb of a tree to which one of these pretended scarecrows was suspended making the most ridiculous cawings imginable, either at the image or its maker, most probably the latter."

PRODUCTIVE APPLE TREE.—The Boston Cultivator says, a tree on the farm of Morris Eames, Dover, Mass., grafted in 1835, produced 7 barrels in 1838; 11 barrels in 1840; and 14 barrels in 1842. Nearly all the small limbs were grafted, two hands being a day and a half in doing it. By this means, the top was speedily and entirely changed.

PRICES OF AGRICULTURAL PRODUCTS.

New-York, July 23, 1845.

COTTON.—Ten to twelve thousand bales were destroyed by the great fire in New-York of 19th ult. Prices, 7⅞*a*7¾.

BUTTER.—Goshen Orange County, 14*a*17—Western, 10 *a* 12.

CHEESE—new, 5½*a*6.

FLOUR—Genesee, $4.37½—Ohio and Michigan, $4*a*$4.31¼.

GRAIN—Wheat, dull—Rye, 65—Corn 49*a*50c.

HEMP—Dew rotted, per ton, $68*a*$70—water rotted, $90*a*$110.

HOPS—per lb. 13*a*14 cents.

HAMS—Pickled, per lb. 6*a*6½—smoked, 8*a*8½.

BEEF—City Mess, $9.50*a*$9.75—Tierce beef, suitable for shipping to England, scarce and wanted.

LARD—(good) 8*a*8½.

PORK—Per bbl. mess $12*a*$13—prime, $9.37½*a*$9.81.

TOBACCO—Kentucky, per lb. 3 cents—Connecticut seed leaf, 8*a*10.

WOOL—We give Boston prices according to the New-England Farmer of July 16

Prime or Saxony fleeces, washed per lb.....	$0.40*a*0.42
American full blood fleeces,.....	37*a*0.38
" three-fourths blood fleeces,.....	35*a*0.36
" half blood do	32*a*0.33
" one-fourth blood and common,....	30*a*0.31

FARM FOR SALE.

THE subscriber offers for sale the farm upon which he now resides, situate in the village of Auburn, in the county of Cayuga, and containing 100½ acres.

This farm lies upon the south side of the western turnpike, (now Genesee-st., Auburn,) and is well known as having been the residence of Hon. Nathaniel Garrow, deceased, for many years.

The buildings, fences and other erections thereon, are ample and in good repair; the soil will vie with that of any other farm in Western New-York, for fertility, variety and earliness of vegetation. Great attention has been paid as well by the former as also by the present owner, to the selection and cultivation of choice fruit, and there is now upon the farm, in full bearing, a great abundance of the best varieties of apples, pears, cherries, peaches, grapes, &c. &c. The farm is well watered, durable springs, which give a never failing and ample supply.

The location is believed to be as desirable as that of any other farm in the state, as well for farming purposes as also for the residence of the gentleman or a man of business, being withing a few minutes walk from the Rail Road Depot, and within a few rods of the Female Seminary.

A credit will be given, if desired, for a large portion of the purchase money, for a term of years upon payment of interest annually. Inquiries may be made of the subscriber upon the premises, of LUTHER TUCKER, Esq., Editor Cultivator, Albany, or of DAVID WRIGHT, Esq., Auburn. JOHN REMER.

Auburn, N. Y., July 14, 1845.—3t.

A LAKE FARM FOR SALE.

THE subscriber offers for sale the Farm owned by Hon. JEDEDIAH MORGAN at the time of his death, situate on the east side of, and adjoining, the Cayuga Lake, about two miles south of the village of Aurora, in the town of Ledyard, (formerly Scipio,) containing about 360 acres, with a good porportion ot Timber Land, on which the oak and hickory predominate. The road leading from Auburn to Ithaca, via Aurora, passes through the Farm, dividing it into two nearly equal parts.

The land is of an excellent quality, as well for wheat and other grain as also for grass.

The situation and location is believed to be as eligible, and to combine as may advantages, as any other farm in the county. The first point of land which makes into the Cayuga Lake, above the village of Aurora, is a part of the farm.

A large proportion of the purchase money can remain, secured by bond and mortgage, upon annual interest. Any person wishing to view the farm, can do so by applying to C. C. WHITE, the tenant upon the premises. The whole will be sold together, or in parcels, to suit purchasers. Letters of inquiry addressed to the subscriber, *post paid*, will be promptly answered.

DAVID WRIGHT,
Trustee of the Estate of Jed'h Morgan, dec'd.

Auburn, July 14, 1845.—August 1—3t.

FARM FOR SALE.

THE subscribers will offer for sale at Public Auction, on Thursday, the 21st day of August next, at 12 oclock M., on the premises, that valuable farm in the town of Bethlehem, formerly the residence of John H Burhans deceased, 3½ miles south from the city of Albany, and one mile from the river; containing about 104 acres of land, some 30 acres of which is covered with wood; a good orchard of about 100 bearing apple trees; the dwelling house, barn and other buildings in good order.

Said farm has a never failing stream running through it, and an excellent well affording an abundant supply of water at all times.

Persons desirous of purchasing, will call on the subscriber, H. H. Burhans, on the premises, who will show them the superior qualities and location of the place.

Also, a quantity of household furniture, and farming utensils will be sold. Terms made known at the sale.

H. H BURHANS, } Assignees.
P. G. TEN EYCK, }

Bethlehem, July 22, 1845.—1t*

LINNÆAN BOTANIC GARDEN AND NURSERY,

Late Prince's, Flushing, L. I., near New-York.

THE new proprietors of this ancient and celebrated NURSERY, late of WILLIAM PRINCE deceased, and exclusively designated by the above title for nearly fifty years, offer for sale, *at reduced prices*, a more extensive variety of FRUIT AND ORNAMENTAL TREES, SHRUBS, VINES, PLANTS, &c., than can be found in any Nursery in the United States, and the *genuineness* of which may be depended upon; and they will unremittingly endeavor to merit the CONFIDENCE and PATRONAGE of the Public, by INTEGRITY and LIBERALITY in dealing, and MODERATON in charges.

Descriptive Catalogues, with *directions* for *planting* and *culture*, furnished *gratis* on application to the *New Proprietors*, by mail, *post paid*, and *Orders* promptly executed. WINTER & CO.,

Flushing, L. I, August 1. 1845.—2t* Proprietors.

TO EXECUTORS ADMINISTRATORS AND GUARDIANS.

New and Important Law Book Just Published.

THE "*Executor's, Administrator's and Guardian's Guide.*" containing a summary of the Laws of New-York, regulating the appointment, powers, duties, rights, and obligations of Executors, Administrators, and Guardians, with general directions appertaining thereto, to which is added an Appendix, containing many of the practical forms necessary to be used by them in the transaction of the business relating to their several trusts, &c., by DAVID WRIGHT, Esq., Counsellor at Law.

Published and for sale wholesale and retail, by

J. C. DERBY & Co.,
Law Booksellers, 107 Gen. St.

PRICE $1,50. Auburn, N. Y.

N. B Persons at a distance, wishing a copy or more of the above new and valuable work, can have them sent by Express, *free of expense*, (upon remitting the amount by the same way) to the different Depots on the line of Rail-Road, as we are the Express Agents of Livingston & Wells, at Auburn.

☞ Agricultural Books of all kinds kept constantly for sale by

August 1—1t J. C. DERBY & Co.

DR. VAN BUREN'S RHEUMATIC EMBROCATION.

RHEUMATISM ANNIHILATED.

THE proprietor of the Rheumatic Embrocation, comes before the public with increased confidence in the healing virtues of his remedy; for since he first offered it to the public, it has been tried in the worst possible, and most aggravated cases, over which it has completely triumphed; in some instances, indeed where the patient had been given up by the attending physician as incurable; and in many cases where all the remedies placed before the Public for the cure of rheumatism, had been faithfully used, without the least effect; thus proving its transcendent superiority. It will allay the pain and soreness, (sometimes in a few minutes,) and reduce the swelling in a much shorter time than can possibly be effected by any other means; in fact, will relieve when all others fail; nor can injury result from exposure after its application. The patient will also be less liable to another attack after being cured by this remedy, than by other appliances; as it cannot effect the constitution in the slightest degree, nor impair the parts immediately involved; but on the contrary, will restore them to their original healthy condition and usefulness. One of the most important advantages this possesses over all other remedies is, that where it is properly applied, no contraction of the tendons can possibly ensue; and where contraction does exist, will effectually remove it; thus preventing any distortion of the extremities, and the patient from becoming a cripple for life, as is the case in thousands of instances, where other modes of treatment are adopted. The proprietor has received from various parts of the United States, and is receiving almost daily, the most flattering testimony to the curative powers of his Rheumatic Embrocation; and he feels now more justified than ever in asserting, that it is a never failing cure, in all the various forms of Rheumatism, Chronic or Inflammatory, and in all complaints of an analogous character, such as contracted tendous, stiff or weak joints and back, sprains, bruises &c., when faithfully and perseveringly employed. He cannot occupy the necessary space in an advertisement, or he would place before the public, the documentary evidence of the truth of his assertion. But though he cannot do this, he is willing at any time, to show them to all who may call upon him at his principal office, No. 56 Sand-st., Brooklyn, Long-Island, N. Y.

Agents solicited from all parts of the United States and the Canadas, and dealt with on favorable terms. Price $1 per bottle.

M. VAN BUREN, Sole Proprietor.

Wholesale Agents, OLCOTT, McKESSON & Co., 127 Maiden Lane, New York. Augnst 1—1t*

FOR SALE.

THE farm of ROBERT WHITE, Jun., Shrewsbury, N. J., highly improved, and in the immediate vicinity of excellent marl. See N. Y. Journal of Commerce.

July 1—2t*

SEED STORE AND AGRICULTURAL WARE-HOUSE.

OUR Spring supply of seeds is now ready, and we shall be happy to receive orders for Field or Garden Seeds, of every description. Black Sea, Italian and Siberian Spring Wheat, Barley, Peas, Clover Seed, Timothy Seed, Seed Corn, Shaker and other Garden seeds, &c. Also, a full assortment of farming tools selected from the best manufacturers in the country. Hoes, Scythes, Forks, &c. cheap by the dozen. E. COMSTOCK.

Rome, Oneida county, March 1, 1845.

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☞ ADVERTISEMENTS inserted in the Cultivator, at $1,00 per 100 words for each insertion.

DR. FEUCHTWANGER'S SCOLICOTOXICON.

RATS, Mice, Cockroaches, Flies, Bed Bugs, Ants, Moths, &c.—The following certificates out of thousands, may give the public an idea of the usefulness of the various preparations, viz:

The room in the building 70 Wall street was badly infested with Cockroaches, and one application entirely dispersed them.
Signed, CHS. MOUNT.

I have used Dr. F.'s preparation to exterminate Rats and Mice, and have wonderfully succeeded in clearing them from house and yard after the first trial. Signed, JOSEPH GRAHAM.

Dr. Feuchtwanger's Fly Paper has been used by me with great success, and near one quart of slain flies has been collected out of curiosity in four days. Signed, A. C. VAN SCHOONHOVEN.

The bed bugs have been cleared out from my store, 211 Hudson-st., effectually. Signed, JOHN SOLOMONS.

The yard in the rear of the Courier & Enquirer office has been for years infestsd by rats, and one application has destroyed them.

The subscriber feels perfectly assured that he is in all instances capable of clearing fields, barns, plantations, granaries, houses, &c., from every species of Vermin, Rats, the large Ants, Weavels, Mice, Cockroaches &c., and believes to say with confidence, that he will and can warrant all his various preparations.

He solicits orders from the country, and promises no person shall be dissatisfied; in short, he can assure his friends that he is performing wonders with his Fly Paper, and Rat and Cockroach Poison. Apply to the oringal discoverer,
Dr. LEWIS FEUCHTWANGER,
August 1—1t. 23 Liberty-st., New-York.

FARM IN ILLINOIS.

FOR SALE—A good farm, with valuable improvements. The subscriber being about changing his business, will sell a great bargain. Also has in immediate vicinity, 2,000 acres choice land, which he will sell at a discount from government price. Address ISAAC HINCKLEY, P. M., Audubon, Montgomery Co., Illinois.

BOOKS FOR SALE.

AMERICAN Farmer's Encyclopedia, price $4—Skinner's Cattle Doctor, price 50 cents, and a variety of other works, for sale at the office of "The Cultivator."

MR. DOWNING'S NEW WORK.

WILEY & PUTNAM, 161 Broadway, New-York, have just published "The Fruits and Fruit Trees of America, or, the Culture, Propagation and Management, in the Garden and Orchard, of Fruit Trees generally; with Descriptions of all the Finest Varieties of Fruit, native or foreign, cultivated in the gardens of this country. Illustrated with numerous engravings and outlines of fruit. By A. J. Downing. 1 vol. 12 mo., (and also 8 vo.)"

This is the most complete work ever published on the subject, and will, it is hoped, supply a desideratum long felt by amateurs and cultivators. July 1—1t.

HOVEY'S STRAW CUTTER.

THIS machine has received the highest premiums of the Agricultural Societies of Massachusetts and New-York, and has given the most entire satisfaction wherever known. Some improvements which it has lately undergone, it is believed, render it as perfect an implement for its destined purpose, as can be desired. There are six different sizes—the prices of which, range from $12 to $35. The two largest sizes are suited to the application of horse-power, &c. For sale in this city. Inquire at the office of "THE CULTIVATOR." July 1—tf.

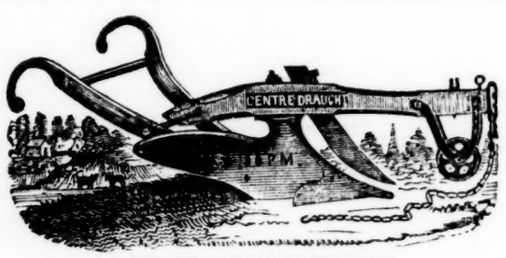
VIRGINIA FARMS FOR SALE.

I HAVE for sale several good farms, being portions of the estate called Oak Hill, in Loudon county, Virginia, late the residence of President Monroe. It is about 30 miles from Washington, Alexandria and Georgetown—in a most healthy region, well watered and peculiarly calculated for raising stock of all kinds. To industrious and enterprising applicants, very liberal terms of payment will be given. S. L. GOUVERNEUR.
Washington, July 1, 1845—july 1—5t.

FARM FOR SALE.

IT consists of two lots, situated on opposite sides of the Albany and Schenectady turnpike, four miles from Albany. The lot on the north of the road, comprises forty, and that on the south, sixty acres. Both are enclosed by a good fence of boards with chestnut posts, erected a little more than a year ago. The lot on the south side has a small house, a stable with shed, and a good yard for manure, or stock. It is also provided with a well of excellent water. There are permanent streams of water on both lots. The stream called the Patroon's brook runs across the whole width of the south lot. With the exception of about a third of an acre on the north lot, both have been entirely cleared, drained where necessary, thoroughly plowed, seeded last year with clover and grasses, and will yield this season nearly or quite an average of two tons of hay to the acre. The two lots are suitable either for one farm or two farms, but will be sold together or separately, to suit purchasers. The natural position, as well as the soil of both lots is good, and cannot fail to give satisfaction. Every thing considered, a more desirable situation could scarcely be found in this vicinity.

For particulars, inquire at this office, or of JOHN McCARDELL, corner of Nassau and Pine-streets, New-York.
July 1—3t.



CENTRE DRAFT PLOWS.

D. PROUTY & Co., Nos. 19, 20, & 22, North Market-st. Boston, manufacture and keep for sale, a large assortment of the most improved Implements of Agriculture, including their celebrated CENTRE DRAFT PLOWS, Cultivators, Harrows, Straw-Cutters, Seed Sowers, Vegetable Cutters, Corn-Mills, Ox-Yokes, &c. &c. For the character of their plows, they have only to refer to those who have used them. The demand for them for a few years past, has been great—they having been sold extensively over the country from Maine to Louisiana, and the western States, as well as in the British Provinces; and have not failed to satisfy all purchasers of their great superiority in the qualities of neatness of workmanship, strength, durability, ease of draft, and complete execution of the work.

N. B. A few of these plows are for sale in Albany. Inquire at the office of THE CUTTIVATOR.
July 1—tf.

ROME PLOW FACTORY.

THE DIAMOND PLOW which received the first premium at the State Fair at Poughkeepsie, as well as at every County Fair where it has been shown, is manufactured by the subscribers in the very best style, and for sale at wholesale or retail. Also, some eight or ten patterns of approved plans, as well as Scrapers, Cultivators, Cradles, Mott's Agricultural Furnaces, &c. Orders from abroad promptly filled, and a liberal discount to dealers.
March 1, 1845. PRAINERD & CO. STOCK.
Rome, Oneida county.